Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

FIFTY CENTS AUGUST, 1952

These INTERCHANGEABLE Cartridges Help Solve COMPLICATED Respiratory Problems!

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American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For further details, use Key # H-1 on free Inquiry Card on page 73)

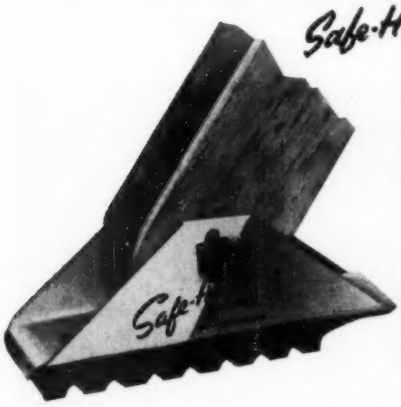
The *rubber* in the Safe-Hi ladder shoe tread holds the ladder firmly on all dry surfaces.

The *cord*, combined with the rubber in the Safe-Hi ladder shoe, securely holds the ladder on all wet surfaces.

The *straight ridges* across the line of slippage, act as a series of squeegees, to scrape off foreign substances and grip the surface.

The *self-sharpening spike*, made with a tempered tool steel core and instantly available with a flip of the hand or foot, holds firmly on snow or ice.

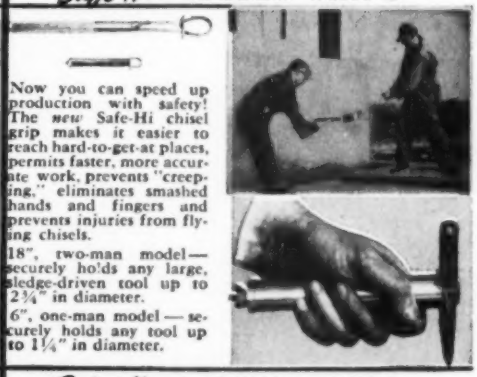
Safe-Hi LADDER SHOES



Stop ladder slipping accidents in *your* plant with Safe-Hi ladder shoes! Tests prove that the Safe-Hi ladder shoe—the only ladder shoe which gives the essential combination of cord, rubber and ridges in the tread, *and* a self-sharpening spike—will hold far beyond the recommended safety angle on *all* surfaces. The "high visibility" yellow on each Safe-Hi shoe, meets the safety color code, protecting against stumbling, tripping.

Approved by *Underwriters' Laboratories* for all surfaces, Safe-Hi ladder shoes are available in two models—steel and non-spark metal; and two widths—1⅜" for straight ladders, and 15/16" for step ladders. For consistent ladder safety—specify Safe-Hi ladder shoes!

Safe-Hi CHISEL GRIPS



Now you can speed up production with safety! The *new* Safe-Hi chisel grip makes it easier to reach hard-to-get-at places, permits faster, more accurate work, prevents "creeping," eliminates smashed hands and fingers and prevents injuries from flying chisels.

18", two-man model—securely holds any large, sledge-driven tool up to 2¼" in diameter.

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The Safe-Hi wall grip holds the top of the ladder securely on all smooth walls. Prevents side slipping, and helps to hold the bottom of the ladder.

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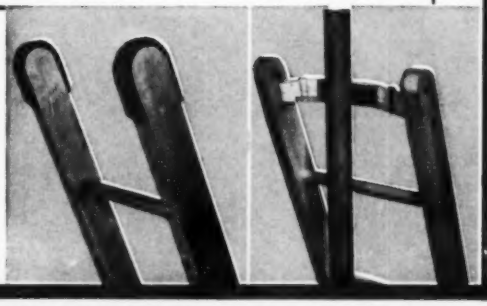
Holds top of ladder on any pole, pipe or corner. Fits any ladder. Prevents sudden tipping which causes workers to plunge off ladders.



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1731 ARAPAHOE STREET DENVER, COLORADO

(For further details, use Key # H-2 on free Inquiry Card on page 73)

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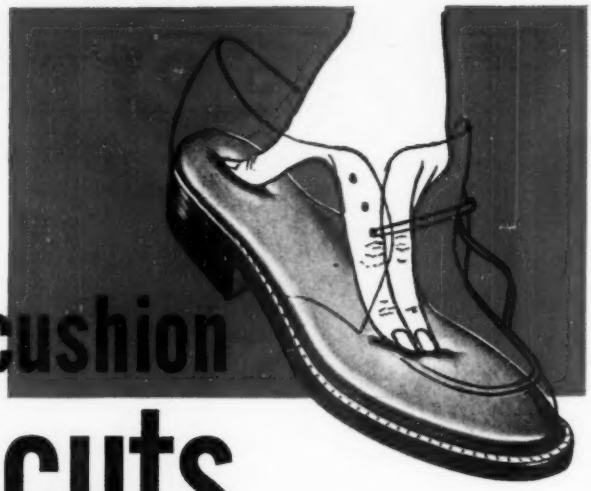

this foam rubber cushion cuts job fatigue!

Every time you take a step your full weight lands on your heel bone. In ordinary shoes, this transmits a sharp shock through your entire body. It's this walk-shock that causes excessive fatigue. And a tired workman is ripe for accidents. In this new Lehigh safety shoe, a soft, springy cushion of foam rubber is sandwiched in leather under the foot. It *sponges up* all the jars and jolts of walking – keeps men fresher at 5. It's a new safety bonus in Lehigh safety shoes. Order a few pairs for your men to try on. One step in it sells it!

LEHIGH
SAFETY SHOE COMPANY
ALLENTOWN, PA.

(For further details, use Key # H-3 on free Inquiry Card on page 73)

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FORMERLY "SAFETY ENGINEERING"

EST. 1901

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AMERICA'S PIONEER MAGAZINE IN ITS FIELD

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It's to Say

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★ DOG DAYS

TIME was when off the job safety was considered a matter of interest only to the employee. Management considered its job well done if it provided a measure of protection up to the time the quitting whistle blew. Fortunately, that line of reasoning went out with the old Model T, with the result that off the job safety is a matter of vital concern to all progressive employers. A leg broken in a jallopy accident or a second-degree sunburn can be as much of a threat to industrial production as a serious injury in the plant. In fact, management must give just as much thought to a replacement or the arduous task of breaking in a new man.

Representatives of industrial employers are quick to recognize the presence of summer hazards which come with vacations or long week-ends. Especially is this true when holidays coincide with week-ends. Already statistics hounds are barking in anticipation of the Labor Day week-end when the grisly parade of highway fatalities and injuries will be described in the newspapers of the country.

Through the medium of posters, well-organized addresses, pictures, films and other reminders, management can do much to safeguard employees against the ravages of summer hazards. Vacation days can be days of tragedy for the unwary travelers who regard 5 P.M. as the quitting time of danger. Not only street and highway accidents, but swimming, sunburn and over-exertion can make a nightmare of the vacation season.

Industrial officials and department heads, as well as professional safety directors can perform an outstanding service and certainly contribute immeasurably to good employee relations by indicating their whole-hearted interest in safety off the job. Not at all incidentally, they can help to cut down their costs by making it clear that a vacation injury is a luxury no one can afford. H.A.

Where IMPACT hazard is frontal only...

In job situations where there is no danger of eye injury from obliquely flying objects, there is no need to restrict worker's vision and comfort with side shield protection. For example—where there are no adjacent machines or hazardous operations, the rugged, lighter-than-acetate Bausch & Lomb metal frame shown below is especially ideal. It is in high demand for buffers, polishers, drill press and jointer operators, hand tool users—and other general indoor wear in semi-hazardous areas.

All-metal Model H-10

Large adjustable nosepads and readily-available range of frame sizes permit easy fitting of this non-corrosive white metal frame to any type of face. Rigid, double bridge in 5 sizes, flexible cable type temples with sweatproof, non-inflammable, insulated covering. Available in 4 lens sizes; may be fitted with safety lenses ground to worker's prescription. Ask for full data: Bausch & Lomb Optical Company, 90520 Smith Street, Rochester 2, New York.

You can benefit from these Bausch & Lomb industrial vision services

1. **Complete Line of Protective Eyewear**—Completely dependable safety eyewear engineered to meet the most rigid tests for every job in your plant. Protection from all types of eye hazards.

2. **Corrective-Protective Service**—Fast, dependable laboratory service in every major industrial area for professionally-prescribed corrective safety lenses for worker comfort and efficiency.

3. **Plant Surveys on Eye Protection**—Bausch & Lomb offers services of experienced safety experts to investigate problems of eye-hazardous operations in your plant and make recommendations for their solution.

4. **Employee Education Programs**—Posters for bulletin boards, pay envelope inserts, other material designed to stimulate interest among workers for eye safety measures; an adjunct to your safety program.

5. **Occupational Vision Service**—A quick, dependable method for relating visual performance of each employee to his job. The Bausch & Lomb Ortho-Rater is especially valuable for identifying accident-prone workers.

6. **Leadership in Optical Science**—For 100 years Bausch & Lomb has been a leader in research and development of products to serve better the optical and visual needs of mankind. All industry is profiting today from this knowledge and experience.

1853 1953 INTO A NEW CENTURY OF OPTICAL PROGRESS

BAUSCH & LOMB CENTENNIAL

BAUSCH & LOMB *Safety Eyewear*

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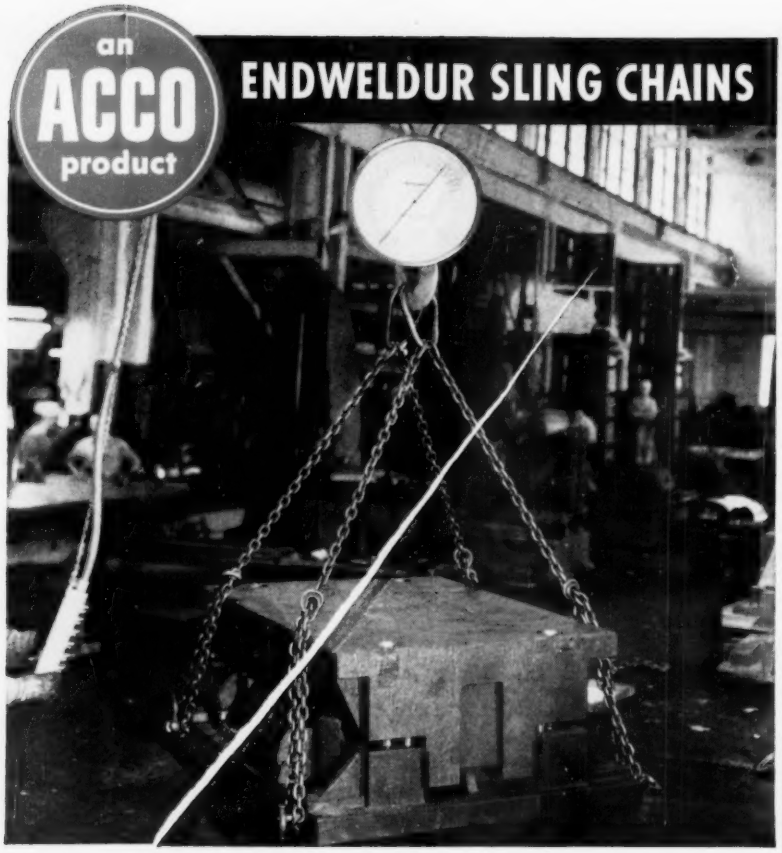

Small AMERICAN Sling Chain Lifts 25,000-lb Load Safely

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This desirable combination of great strength and light weight is the result of scientific heat-treatment of the alloy steel used in this modern chain and the proper combination of engineered hooks and pear shaped links that make up a complete ACCO *Registered* Sling Chain assembly. This gives you a chain that is easy to handle and safe to use even where working temperatures run up to 1000°F.

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American Chain

(For further details, use Key # H-5 on free Inquiry Card on page 73)

THE FUTURE SHOWS

Harrisburg, Pa. *Sept. 16–17*

Pennsylvania Industrial Safety Conference (Hotel Penn Harris). Frank K. Bohl, deputy secretary, Dept. of Labor & Industry, Room 304 So. Office Bldg., Harrisburg, Pa.

York Harbor, Me. *Sept. 17–18*

Sept. 17–18. Twenty-Sixth Annual Maine State Safety Conference (Marshall House). A. F. Minchin, secretary, Industrial Safety Division, Department of Labor and Industry, Augusta, Me.

Chicago, Ill. *Oct. 19–23*

Forty-first National Safety Congress and Exposition. (Conrad Hilton Hotel.) R. L. Forney, general secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Boston, Mass. *Oct. 20–22*

Industrial Packaging and Materials Handling Exposition (Boston Mechanics Building).

Cincinnati, Ohio *Nov. 17–18*

Third annual Greater Cincinnati Safety Conference. (Sheraton-Gibson Hotel.) Kenneth R. Miller, executive director, Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Bldg., Cincinnati 2, Ohio.

Fort Worth, Texas *Nov. 19*

Ninth Annual Fort Worth Industrial Safety Conference (Hotel Texas). L. W. Graff, safety director, Ft. Worth Safety Council, Majestic Bldg., Ft. Worth, Texas.

New Orleans, La. *Dec. 7–8*

Louisiana Safety Conference (Roosevelt Hotel). Charles E. Doerler, conference secretary, Caddo Bossier Safety Council, Inc., 610 Edwards St., Box 806, Shreveport, La.

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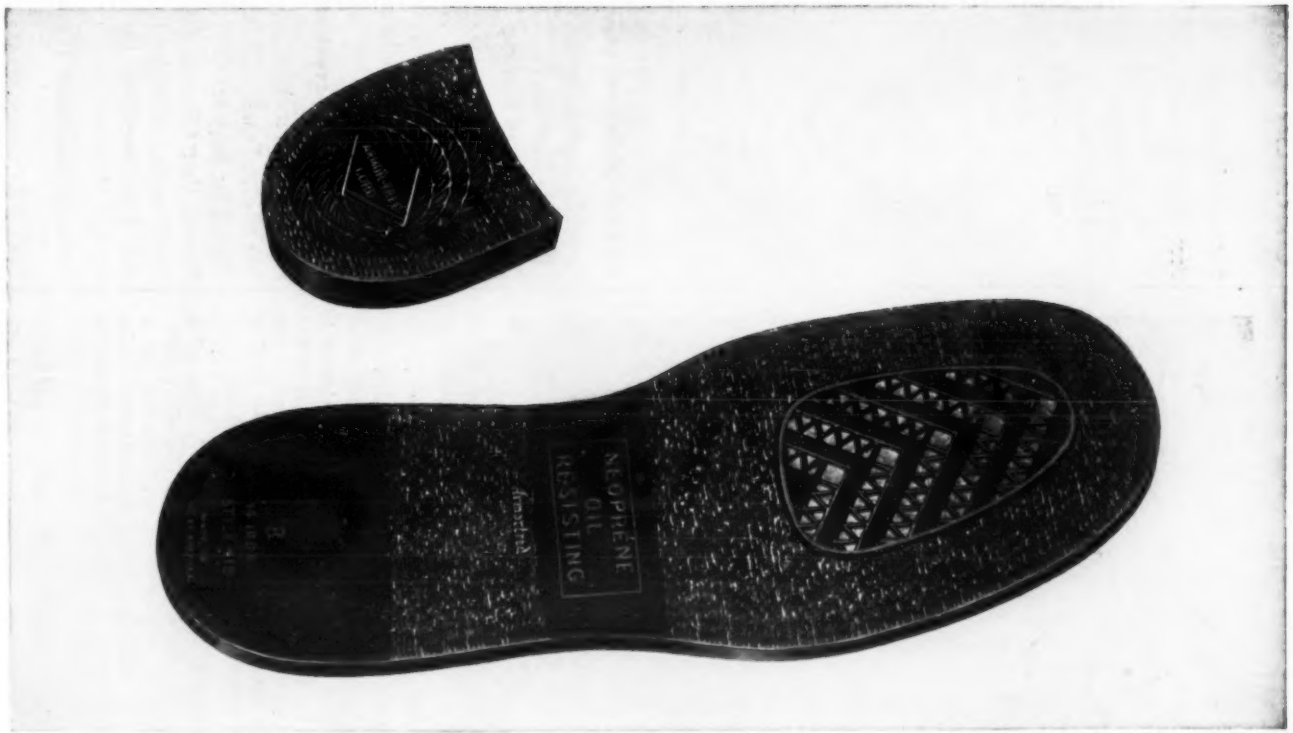

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Now you can protect your plant with "Sprinkler-Stopper," a valuable device which, when inserted into the ring of a sprinkler head, instantly stops the flow of water, but leaves the rest of the sprinkler system operative. As the sprinkler control valve need not be turned off, the plant is still protected against fire until all danger is passed.

Already in use in hundreds of plants, warehouses and public buildings, a "Sprinkler-Stopper" placed beside each fire extinguisher is a vital piece of equipment. "Sprinkler-Stopper" will prove of tremendous value in the event of fire, or if a mechanical failure should cause a sprinkler head to operate prematurely.

"Sprinkler-Stopper" is manufactured in two styles, Model A and Model B, which will accommodate virtually all of the sprinkler heads in current use. Be sure to specify the type head in your plant when requesting information.

Write for free catalog to Department P1

SPRINKLER-STOPPER SALES COMPANY

409 Grand Avenue Englewood, N. J.

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Check List of Aids to Production:

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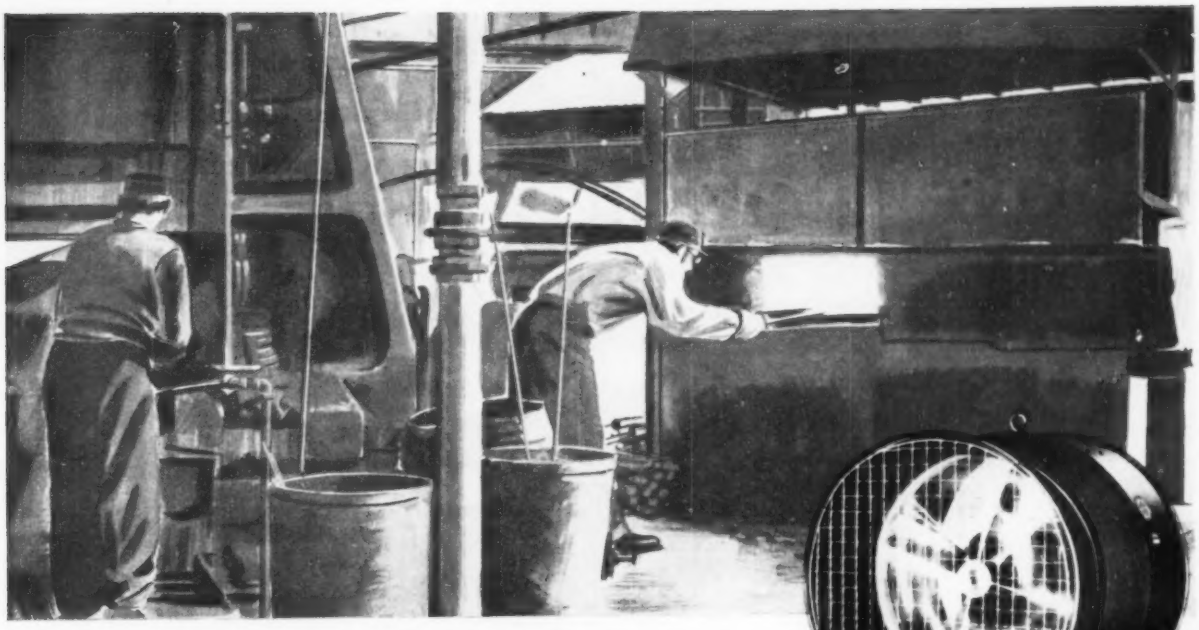

COOL HEADS IN "HOT SPOTS" WON'T LET YOU DOWN

On jobs where the air is foul or hot, men can't be blamed too much for letting up now and then. If you want to keep their efficiency and morale high, feed them better air.

Employers have learned the value of putting Coppus Blowers and Ventilators on the job . . . in confined areas and near furnaces or hot processes. The men work faster, do better work, work longer without fatigue — and appreciate the more comfortable working conditions.

Give some thought now to the "hot spots" in your plant. There is a Coppus Blower for practically any requirement — Cable Manhole and Tank Ventilators, Boiler Manhole Blowers and Exhausters, Heat Killers, Shiphold Ventilators, etc. The Coppus "Blue Ribbon" is your assurance of design and construction planned for plenty of severe service. Check and mail the coupon for specific information. Coppus Engineering Corp., Worcester 2, Mass. Sales Offices in THOMAS' REGISTER. Other "Blue Ribbon" Products in BEST'S SAFETY DIRECTORY, CHEMICAL ENGINEERING CATALOG, REFINERY CATALOG.

ANOTHER
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Please send me information on the Blowers that clear the air for action.

- ☐ in tanks, tank cars, drums, etc.
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- ☐ in aeroplane fusilages, wings, etc.
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- ☐ on steam-heated rubber processes.
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COOLING:

- ☐ motors, generators, switchboards.
- ☐ wires and sheets.
- ☐ general man cooling.
- ☐ around cracking stills.
- ☐ exhausters, welding fumes.
- ☐ stirring up stagnant air wherever men are working or material is drying.

NAME.....

COMPANY.....

ADDRESS.....

CITY.....

(Write here any special ventilating problem you may have.)

(For further details, use Key # H-8 on free Inquiry Card on page 73)

WILLSON®
Kover-Mor goggles
Strong...Light...Comfortable

Try this pair of nylons for longer, more comfortable service!

For Weldors ▶

Willson *Spatterproof*® cover glass protects *Willson-Weld*® filter glass against pitting. (*Note* four indirect ventilating ports admit ample air but keep out sparks and flashes)

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Willson *Super-Tough*® lenses are heat-treated for impact resistance. (*Note* four screened eye cup ports admit air to keep lenses fog-free)

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1. Lightweight nylon offers *highest strength/weight ratio* known for goggle cups; non-flammable; won't conduct heat

2. External screw caps permit *easier lens* changing—no springs or clamps to remove

3. Standard 50 mm. round lenses make it unnecessary to stock odd-size replacement lenses

4. *Extra* ventilation is provided by slots in screw caps plus ports in cups

5. *Comfortable fit* is assured by adjustable two-piece headband, leather bridge curtain and rigid metal top bar

Notice the rigid metal top bar

—standard on Willson Kover-Mor* Goggles. Makes them easier to handle—holds them firmly in place.

Ask your Willson distributor for new Kover-Mor* Welding or Chipping Goggles — strongest lightweight goggles you can get — or write for new bulletin.

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Easy to get anywhere!

More Than 300 Safety Products Carry This Famous Trademark

WILLSON®

Established 1870

WILLSON PRODUCTS, INC., 207 Washington St., Reading, Penna.

(For further details, use Key # H-9 on free Inquiry Card on page 73)

SAFETY MAINTENANCE & PRODUCTION

SAFETY FOR WOMEN IN INDUSTRY

By JEANNE MICHAEL
Safety Inspector
Wright-Patterson AF Base
Dayton, Ohio

IN 1952, women constituted 30 percent of the labor force in the United States. The introduction of women into industry has raised a number of questions basic to their safety. But there is sometimes too great a tendency to isolate women when considering these problems. For the sake of developing an efficient working force on the one hand, and of giving protection to workers wherever protection is needed on the other, one must neither overestimate nor underestimate the difference between men and women as industrial workers. This is just as necessary in the field of safety as it is in the field of occupational skills. A good program of safety in a plant requires an understanding of how far these differences are important and when they cease to be significant.

To what extent should the safety of women be treated as different from the program for men? Many—perhaps most—of the factors involved in establishing good standards and practices are the same for women as for men.

First, let's underscore some of the facts that produce different problems for women. For instance, women workers customarily have a double responsibility—their job and the home. They are more likely to have a

good many outside responsibilities that are a potential threat to their staying power on the job. In sharp contrast to the popularly envisioned picture of the "average" family, consisting of father, mother, and children, stands the fact that in 1950, a woman was the head in about 4 million of the country's families. Six out of 10 support dependents in addition to supporting themselves. One out of 7 is the sole support. Twenty-five percent of all women workers have children under 18 years of age.

Psychology of Women Workers

In comparing women workers to men workers, it should be remembered that their physical and psychological make-up are different. Limitations of strength, characteristic skeletal structure, possible susceptibility to specific diseases, all make it important to recognize hazards that may not exist for men. The placement of an individual woman on a specific job calls for an understanding of how well her abilities, mental and physical, match the requirements of that job. If a woman is physically unable to perform skilled and responsible work, she cannot be taught to do it safely. If she is capable of skilled and responsible work, it will be difficult for her to adjust to a highly-monotonous and routine job. A worker who is not able to perform his work or who lacks interest in it, must certainly put forth more energy and muscular activity to produce a certain amount of work than the well-trained individual who is fitted for the work both mentally and physically.

Avocations are more significant clues in proper placement of women workers than in the case of men. For example, women expert in needle work usually do well in jobs calling for finger dexterity; certain other skills have a transfer value, such as those of beauty operators, who can do especially well in delicate manipulations.

The work that women have already done in mechanical and other unfamiliar trades belies the myth of their being less mechanically minded than men. The old saying, about boys playing with electric trains because they are mechanically minded and girls playing with dolls because they are not, might better be reversed to read that boys become mechanically minded because they are given mechanical toys to play with and girls don't become so minded because they are given dolls to play with. Consider the fact also that female students are not given the same opportunity in vocational schools to secure a general mechanical training and background. But with a properly selected group of women workers, the foreman need not be afraid that women will fail to respond to job training.

Women who have never had industrial work experience are very insecure and uncertain of their abilities and they need objective understanding rather than chivalry. Preparing the worker for the idea of safety should be done in the initial contact of the worker with the plant. An advantage in training women to work safely results from their lack of mechanical familiarity and experience. They do not bring to industry "picked up" habits which may be unsafe. In many types of industry it is possible through training to control the majority of unsafe acts of individual workers since most productive processes are repetitious and therefore governed by employees' habits. It is far easier to instill safe work habits and attitudes in employees than to try to control the unsafe ones. Moreover, safety is involved in much more than the job itself. It is involved in the way the worker walks through the plant, in her alertness to her environment; in how she thinks and feels about her job, in her attitude toward her fellow workers. "Safety-mindedness" is something new to her, and it is hazardous and wasteful to let her achieve it through experience alone.

Environmental Factors

Certainly it is true that the worker's comfort, health and efficiency depend largely upon environmental factors. Adequate sanitary facilities and properly equipped rest rooms are necessary for women workers. While good ventilation is important for any worker, it is especially important to women workers because of their smaller lung capacity and fewer red corpuscles.

Defective illumination has long been recognized as an important factor resulting in accidents and fatigue as well as decreasing production. The close work, such as inspection, that many women perform calls for special lighting. It has been shown that eyes are generally used in serious work 70 percent of the time, and that failure to provide proper lighting will increase consumption of bodily energy.

Although excessive noise may affect the nervous system unfavorably, there is no definite proof that women are more adversely affected than men by noise; however, more complaints regarding noise seem to be received from women than from men. For the benefit of both men and women workers, noise should be reduced as much as possible. Most people's hearing efficiency drops towards the end of the day, simply because the hearing-telegraphic apparatus has become tired, just as a muscle gets tired from constant exertion. Sound beats upon us and drains off bodily energy as we combat it.

Lifting

One of the greatest differences in men and women workers is the difference in their ability to lift. Women on the average, are only 85 percent as heavy as men, with about 60 percent as much strength. In general, therefore, women cannot match the average man in lifting and holding heavy weights, pulling or pushing loads and in hand grip. Muscular fatigue occurs easier in women and careful attention should be given to weight bearing. The U.S. Department of Labor sets up the following weights as within the safe limits for male and female workers required to perform continuous or repetitive lifting opera-

(Continued on page 14)

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tions: 50 pounds in compact form for male workers; 25 pounds in compact form for female workers. Six states prohibit employment of women at tasks involving lifting or carrying heavy weights.

Before any woman, whether newly-hired or an old employee, is assigned to a job involving lifting, the medical department should approve her placement. In particular, women whose medical history reveals complications in pregnancy, tumors, heart disease, hypertension, or poor physical development should be placed on work requiring no heavy lifting.

All workers should be taught the proper way to lift and carry weights. It is undesirable for women to carry loads in such a manner as to place excessive pressure on the chest and abdomen. There are 3 considerations to be taken into account in the control of manual lifting and carrying; the distance to be raised or carried, weight, size, shape and the pace and duration of the heavy work during the course of the day. At first thought, the weight of the object seems the primary consideration. But remember, the tired worker, the worker who carries even moderate loads over long distances continually throughout the day, is not only less productive, but also more likely to strain, sprain, trip or lose his balance. More foot-pound-energy is expended in lifting from floor to bench level than handling material at bench heights.

Fatigue

Whether women become fatigued more quickly than men; and whether, in particular, their feet and legs tire more readily is still being debated. However, there is a decided difference between the men and women workers in the incidence of varicose veins. Seats are vitally important for women workers. Arrangements should be made so that women can change from a standing to a sitting position. In muscular work, output has been found to increase from 2 percent to 13 percent when workers could alternate sitting and standing. Bench, chair and stool height should be carefully studied. The front edge of the chair is often a source of trouble. If it extends too far under the knees, circulation is cut off, and the same result occurs if the edge is too sharp. Regulations in four states specify seats with backs, where seats are required. Chair manufacturers who have made scientific investigations of fatigue, supply industrial chairs having wooden saddle type seats with suitable, adjustable back rests.

The frequency of rest periods can best be determined only by special study of a particular job. Decreasing fatigue has justified the statement made by the Gilbreths that "more output can be achieved by applying oneself steadily for short periods of time and then resting, than by applying oneself steadily and having no rest periods."

Pregnancy

The proportion of married women in the labor force has continued to increase since the war and with many married women at work (55 percent of the 19 million in the 1952 labor force were married), the effect of work on pregnancy is receiving much consideration. Plant management should develop and carry out a sound maternity policy; such a policy becomes necessary in order to preserve the maximum stability of the workers and to minimize the risks to their health that they may run. Pregnancy results in marked variations in breathing, pulse, and the composition of the blood as well as lessening of muscular power. Furthermore, the physical condition of the pregnant woman changes from month to month. All of these factors must be taken into account. A pregnant woman should not be given assignments that involve heavy lifting or other strenuous work that requires agility, endurance, continuous walking or standing. She should not be placed on work that calls for a good sense of bodily balance or exposure to toxic substances which can exert an injurious effect on the blood-forming organs, liver or kidneys. The following chemicals have a particular effect on women: benzol, TNT, carbon bisulphide, lead, mercury, arsenic, zinc and carbon tetrachloride.

In the matter of occupational "contact" dermatitis, some authoritative agencies believe that women are naturally more sensitive than men to some of the skin irritants. While skin irritations may develop more readily in women, they seem to be of a minor type since women are much more likely to be conscious of and report skin irritations at their earliest onset; perhaps because they attach more importance to their personal appearance. The severe reactions found in men have not been seen in women.

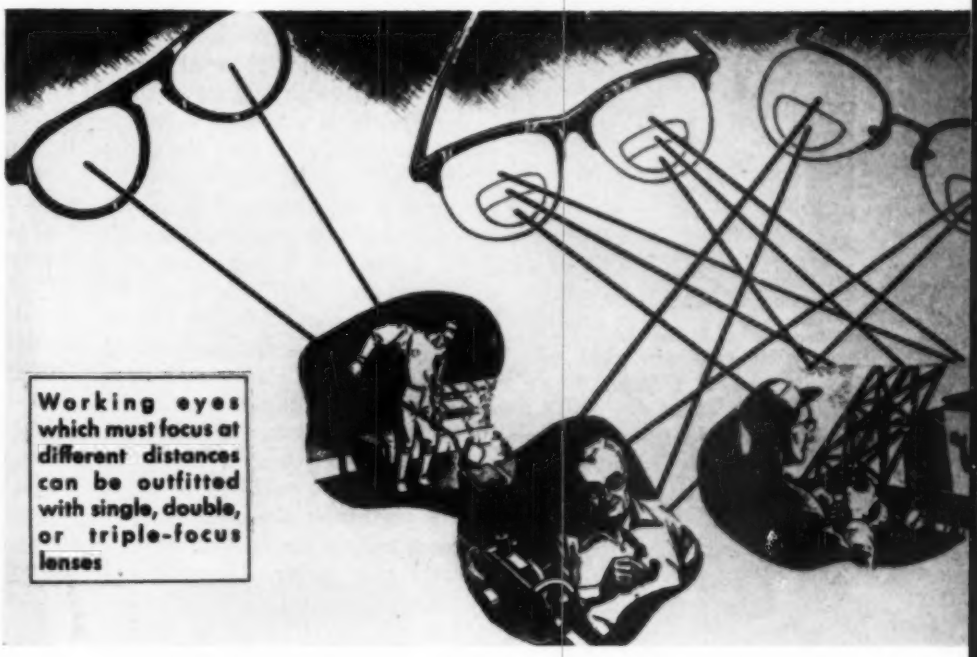
Education of the worker should consist, not only of warnings against primary irritants she may handle in the course of her work, but against agents ill-advisedly used to cleanse the skin, such as turpentine, thinners and like materials. It is important for workers to understand that occupational contact dermatitis is almost always an external problem, as is an acid burn or a case of poison ivy and that it is not contagious. We should try to eliminate the words "oil poisoning," "oil boils" and like expressions from the employees' vocabulary.

Clothing

There have been a great many discussions over what the well-dressed lady shop worker will wear. The issue can be avoided largely if women are told on taking a job that a specific type of clothing must be worn, particularly the type of shoes to be worn; type of protective hair covering; the type of eye protection and the necessity of no jewelry for certain jobs. In other words, to be effective, wearing of safety clothing should be a condition of her employment. Implanting these rules on employment con-

(Continued on page 60)

Tool-Up the Working Eye



Working eyes which must focus at different distances can be outfitted with single, double, or triple-focus lenses

FOGGY, inefficient vision among workers is a big "bug" in American plants and factories. The same thing is true in greater or less degree of shops, stores, offices, and on service jobs. If the nation's working eyesight were brought up to as high a level of performance as its machines, equipment, and organization, there would be a startling jump in volume of production and in employees' health, welfare, and earnings.

Judging from the experience of plants and industries which have tackled and licked the problem of workers' eyesight, it seems probable that over-all gains in the neighborhood of 15 percent could be accomplished, simply by making sure that eyes are fitted for the job at which they work. This upgrading can be done almost wholly with corrective spectacles. It is just beginning to dawn on many workers and their employers that there is a right kind of vision for the particular job, just as there is a right-sized wrench for every bolt and nut.

Industrial vision is becoming a specialized department of good vision in general. Most people realize that their eyesight needs attention when they can't see well to read, or if the distant view is blurred when driving a car. But it is not so generally known that sight on the job puts other kinds of burdens on the eyes, by requiring them to focus sharply at other, special distances—often two or three distances. Also, requirements differ in the extent of the visual field, or ability to see "sidewise."

Two-fifths of all workers don't have the vision they need for the job they do.

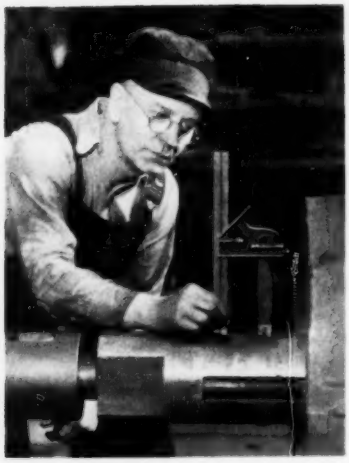
In four-fifths of these cases, faulty vision could be brought up to par with spectacles or other treatment.

Not one company in six has an adequate eyesight protection and improvement program.

Variable Focus

A desk or bench worker, for example, usually needs to see over distances ranging from 10 to 30 inches, and over area diameters of 12 to 40 inches. Boiler makers, plasterers, aircraft mechanics, automotive mechanics, paperhangers and painters all need the ability to focus at various distances, and to see over varying areas. Anyone who shifts his eyes between a blueprint or pattern and the work being done illustrates the need of variable focus.

This business of focusing can be described as work for the eye muscles. The little ciliary muscle within the eye pulls at the flexible crystalline lens, trying to change its shape to suit varying distances. The



Setting up a boring mill calls for delicacy of touch plus acute vision.

extrinsic muscles tug and pull at the eyeballs, rotating them inward so the vision will converge on near objects, outward for distant seeing. No wonder the eyes and head throb with pain at the end of a day. Often these muscles simply can't cope with the job—vision remains blurred and imperfect in spite of all they can do.

Eye Examinations

Both for head-racking eye fatigue and for foggy vision, the first line of defense is an eyesight examination leading to a pair of spectacles. The eyesight specialist should be told exactly what kind of work the glasses are needed for. If the job calls for constant changes in focal distances, he may prescribe bifocals or even trifocals, with each segment designed for its required distance of seeing. Such glasses are marvels of ophthalmic science—the finest precision tools a worker can have in his kit.

For companies which decide to launch an eyesight program, the method of fitting the right eyes to the job, or of making them fit with spectacles, has been developed with surprising exactness.

Usually, a group of workers is selected whose hourly earnings are above the average. It is assumed that these people have good eyesight for the job, or they wouldn't be good workers. They are given eyesight tests with an optical screening machine, to set up standards of visual performance. In a test lasting two or three minutes, this device can show what abilities their eyes have as to near and far acuteness of vision, tendency to deviate, color discrimination, depth perception, and so on.

The scores thus obtained are recorded on a graph, and are taken to indicate the best kind of vision for that particular job. Then the entire personnel engaged in that kind of work is tested with the screener. By comparing each worker's score with the standard set by high-earning employees, any visual deficiencies are shown at a glance. In the case of faulty eyesight, the worker is advised to get corrective glasses, and often the employer bears part or all of the cost. Or, the worker is transferred to another department, where his type of vision is suited to the work.

In plant after plant, this kind of vision analysis has paid off for employer and worker. Quantity and quality of output have been known to increase by from 15 to 20 percent. Excessive spoiled work and wasted material have been traced directly to poor eyesight on the job. One plant experienced an improvement of 19 percent in quantity and 16 percent in quality after one-fifth of its employees had received eye-care, backed up by an improved lighting system.

A medium sized manufacturing company learned that nearly one-third of its inspectors fell below the visual standards for the job. Among below-average workers, 63 percent failed the vision test. Then a vision program was installed. Nearly all employees in the production department were promptly brought up to the necessary visual skills. Employee turnover was 10 percent less, attendance was 5 percent better, production was 10 percent higher, and number of product rejects dropped from 15 to 7 percent.

Before the vision program was installed, each employee averaged six visits per year to the first aid room for treatment of headache or indigestion. This figure dropped to 3.4 visits. Number of machine accidents declined one-third.

The proof of the eye-pudding is in earnings, too. In one case, employees whose vision had been made to fit the job earned $1.12 per day more than those having inefficient and uncorrected vision.

Increased Safety

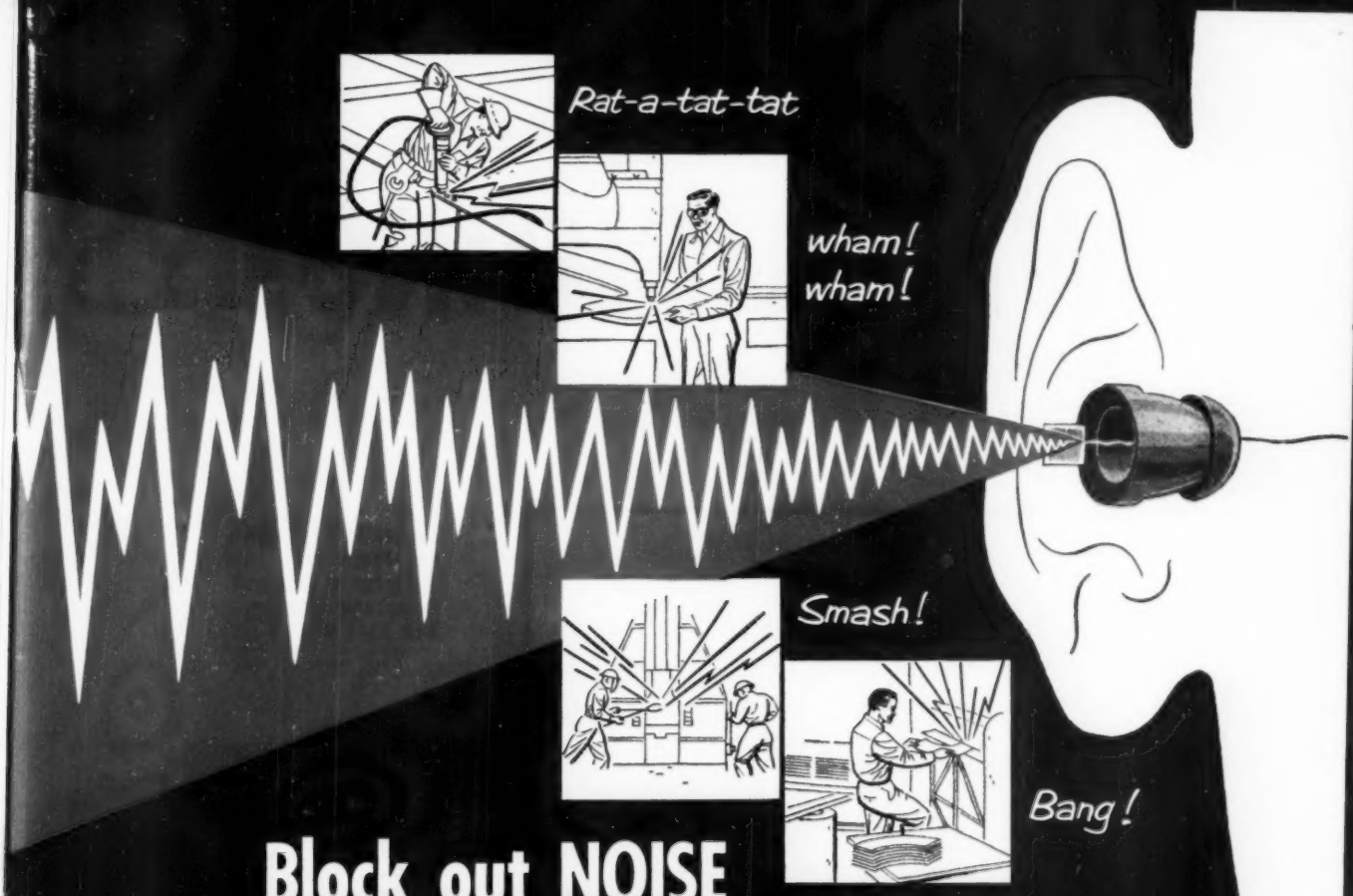
The accident record also demonstrates the part played by vision in the worker's performance. One authority believes that a 25 percent reduction in serious injuries is possible by setting up certain visual standards. All workers with the best safety records in one survey were found to have normal visual acuity. Among those with only average safety records, 40 percent had less than normal acuity. Among the accident repeaters, 60 percent were below visual par.

No worker need feel that he is slipping or try to conceal his vision shortcomings, just because his eyes do not function well on the job. Naturally, a person takes pride in being able to see without glasses. But the wearing of glasses is no sign that the eyes are "bad." They may be completely healthy, but only in need of aid in focusing. A fine camera will take poor pictures unless it is properly focused.

Good vision is good job insurance, and if the employer does not provide a visual service, the employee should look after his own eyesight. Some years back it was discovered that 92 percent of American industries did not make it a rule to check a work-

(Continued on page 26)

This aircraft panel-control worker has equipped her eyes to avoid planting a coded wire in an incorrect spot.



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WHY LIGHTING IS P

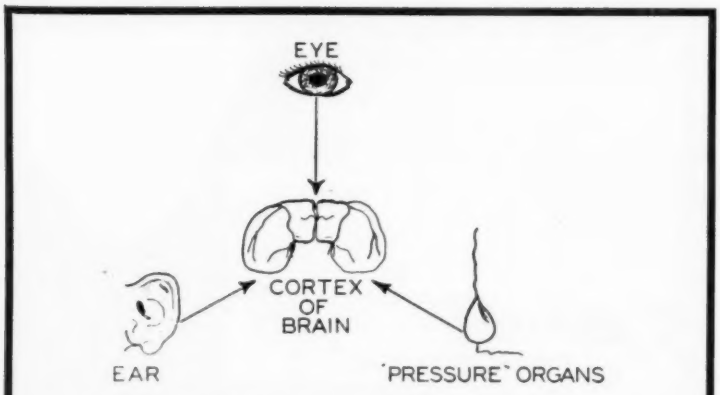


Fig. 2 Orientation triad shows brain objectively oriented by visual operation of eye and subjectively oriented by gravity operated ear and pressure organs.

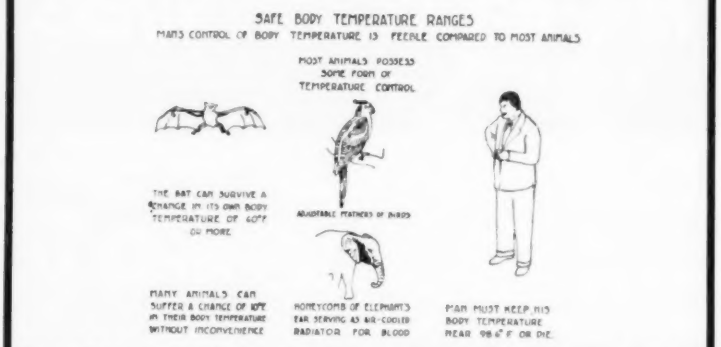

SAFE BODY TEMPERATURE RANGES
MAN'S CONTROL OF BODY TEMPERATURE IS FEEBLE COMPARED TO MOST ANIMALS
MOST ANIMALS POSSESS SOME FORM OF TEMPERATURE CONTROL
THE BAT CAN SURVIVE A CHANGE IN ITS OWN BODY TEMPERATURE OF 40°F OR MORE
ADJUSTABLE FEATHERS OF BIRDS
MANY ANIMALS CAN SUFFER A CHANGE OF 10°F IN THEIR BODY TEMPERATURE WITHOUT INCONVENIENCE
HONEYCOMB OF ELEPHANT'S EAR SERVING AS AIR-COOLED RADIATOR FOR BLOOD
MAN MUST KEEP HIS BODY TEMPERATURE NEAR 98.6° F OR DIE.

Fig. 3 Diagram shows how most animals can adjust to climate changes. Man has to control environment since he cannot withstand great temperature changes.

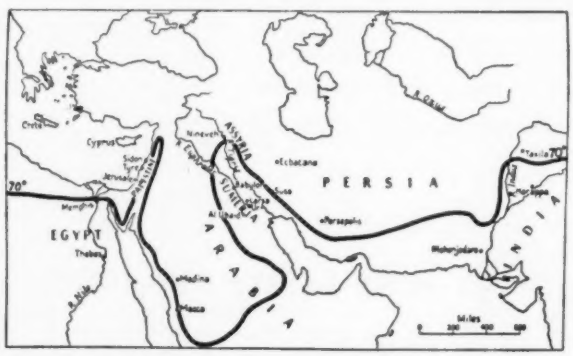


Fig. 4 The sites of all ancient civilizations lie along the 70° isotherm.

By HENRY L. LOGAN
Vice-President,
In Charge of Research
Holophone Company,
New York City

WE ARE primarily concerned in this discussion with accidents that are detectable by the senses, and that operate more slowly than the rates of perception and response of the individuals concerned.

Accidents from causes which the senses are not adequate to protect us against must be mechanically monitored by devices which will give a sense warning of the impending event in sufficient time, and by training the workers to observe necessary precautions.

Falls, falling objects, collisions with stationary objects and contact with moving machinery are some examples of the accidents detectable by the senses. Automobile accidents and contact with cutting objects are also of this type. Accidents of this kind represent by far the majority of accidents.

Involved in this type of accident is what is called the orientation triad of the individual. (See Figure 2.) The three legs of the triad are the visual apparatus, the eye; the vestibular apparatus in the ear; and the pressure organs located generally throughout the skin and muscles and other parts of the body, with the nervous connections of those three elements. The dominant member of the triad is visual. Orientation for the purposes of this article

PROTECTION!

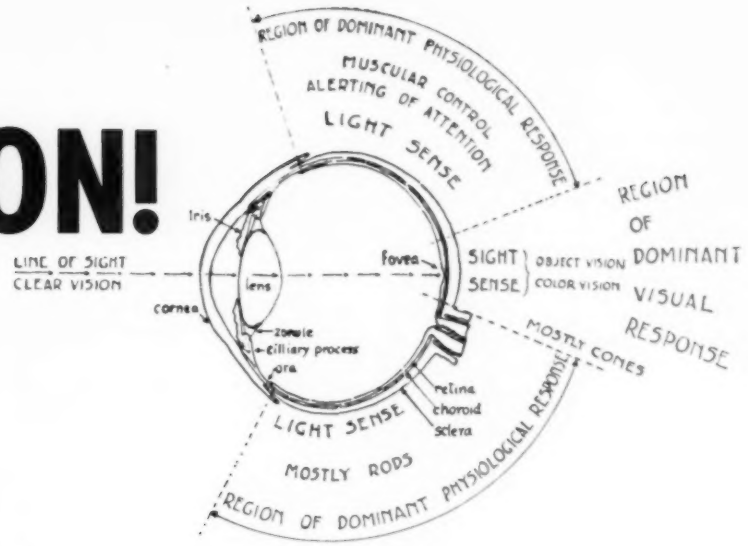


Fig. 1 Section of human eye illustrates areas of visual and physiological response.

FEATURE

First of a feature series on Lighting. Next articles will appear in the September & October issues.

may be divided into two parts: subjective and objective. Subjective orientation is awareness of your position in space, whether upright, upside down, inclined, lying down, stationary or moving even with the eyes closed. The operation of the vestibular canals of the ear and the pressure organs scattered throughout the body, in response to gravity, convey this information to the individual. Also, the sense of touch, if the individual can contact local things, aids in establishing this subjective orientation.

However, objective orientation, which means the individual's awareness of his relation to other objects in space, is almost exclusively a function of the eyes. The eyes cannot operate without light, so safe and successful orientation is largely a matter of proper lighting. Accidents of the kind we are discussing in this article happen within range of the normal individual's rate of perception. Therefore, they are necessarily associated with some defect in objective orientation, the function of the eye. If the eye is a healthy normal one, the environment (in this case lighting) is inadequate for the eye to perform its function adequately.

In essence, prevention of accidents of this type is as simple as providing proper lighting. However, in practice the types of light distribution best suited can only be understood in the light of the facts about how the eye works, and the features of the environment in which it works.

Development of Eyes

When did the eye develop and why? Eyes or a means of perceiving light became necessary as soon as life that moved developed. Stationary forms of life have no eyes. Plants have no eyes and do not need them; but moving forms of life, that can change their environment by moving in space, encounter varying hazards and benefits. They have to be able to know these hazards and benefits in order to survive. An organ that will respond to light is the principal means of accomplishing this.

Primitive light-responsive organs accept light unselectively from any direction and so the animal possessing them has only the vaguest sort of vision. It cannot "see," as we understand the term, but the impulses set up by light in the network of nerves leading from these light-responsive organs go to the muscles of the animal, causing reflex actions. This mechanism, a means of receiving light stimuli, a means of changing the light into a nerve impulse, a direct tie-in of these nerves with the animal's muscles, is the means adopted by nature to automatically ensure a safe or beneficial response of the animal to its environment. That is the fundamental purpose of eyes—to keep you alive from day to day.

Eyes began then as an "automatic" safety device to ensure survival. Human eyes retain this physiological function of earlier eyes with the added function of seeing detail. There are two types of light receptors in human eyes—rods and cones. The cones are principally packed into a tiny space in the central region of the retina called the fovea. We see detail with the fovea. Man has a line of sight which must connect the object he wants to see with the fovea, through the lens. He only sees clearly along his line of sight. Look at a sheet of single-spaced typing. You cannot read the words in the third line above or below your line of sight unless you move your eyes the short distance necessary to change your line of sight and look directly at the words. (See Fig. 1.)

All our lighting procedures up to date have been established on the basis of the fovea containing the

cones, which occupies only 5 percent of the retina. The rod 95 percent has been neglected. The rods are the fundamental part of the eye mechanism from the standpoint of reaction to the environment. They are what keep you living from day to day. The rods possess a tie-in with the "motor" system of the body as in earlier forms of life, and they initiate automatic or reflex action. If man had to take time to think, to act, his environment would destroy him. It is this automatic mechanism that permits man to safely engage his attention on the line of sight without conscious regard for the potential hazards of his environment.

To make this clearer take a pair of plain glasses and paint them black, except for a little clear space in the center that is large enough to illuminate the foveal region of the retina, which is that part of the eye with which you see detail. You will be able to read just as well as ever, and be able to do any close, fine work, just the same as before; but you won't be able to move around without the aid of a seeing-eye dog. People who are permanently in this state meet the legal qualifications of the blind, and are entitled to all the public aids provided for the blind. Yet they can "see" as well as anyone. On the other hand, if you will block that same part of the eye, but let light in from the remaining 99 percent of the field of view, you will be unable to read or do any close work, but you will not be legally blind, and will need no aid in getting around. It is doubtful if, among some primitive populations, individuals who were so handicapped would ever realize it, as it would not interfere with the successful operation of their objective orientation, and they would be just as safe in moving around as anyone else.

It is evident that the principal job of the lighting engineer is to provide those overall distributions of light that will effectively operate our visual orientation apparatus, and will cause rapid, automatic, safe responses in all working environments.

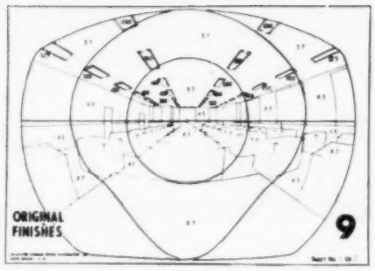


Fig. 5 Spherical perspective of office shows how eyes will react to lighting.

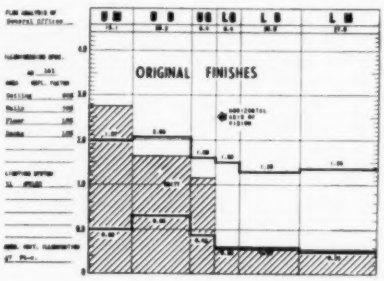


Fig. 6 Flux diagram shows that reflective values vary too widely over room for complete eye safety and comfort.

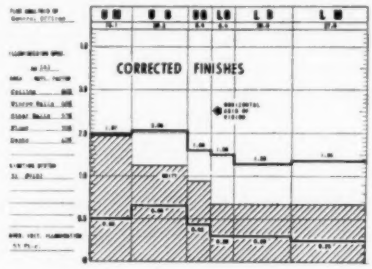


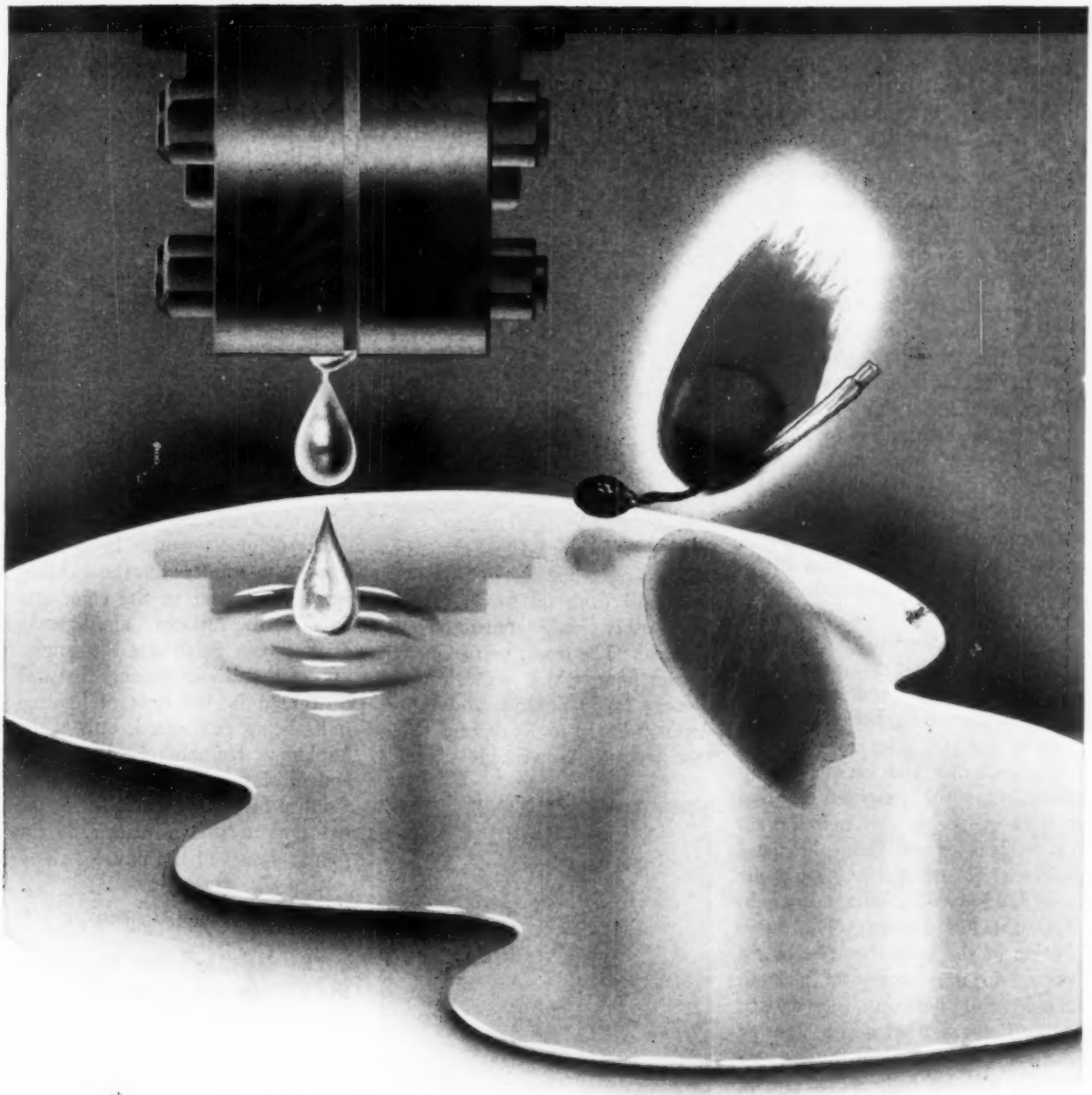
Fig. 7 Corrected finishes balance lighting without moving or changing lights.

Man vs. Environment

Man is a creature of his natural environment, just as are all other forms of life. He can maintain health and vigor only as long as he lives in a natural environment to which he is adapted, or as long as he controls his artificial environment with his inventions. Man came originally without clothes, without any inventions, without any knowledge of all the protections with which he surrounds himself today, but he lived. In order to do so he had to come into an environment that was tempered to his very tender susceptibilities. (See Figure 3.) Man has an extremely critical internal temperature which, along with his other physiological responses to humidity, air pressure, air movement, and solar radiation dictate an external temperature of 70 degrees F. plus or minus 5 degrees. Therefore, he had to begin life in an area where this temperature with little variation would prevail. That environment exists scattered in various areas along the 70 degree F. annual isotherm where it crosses land masses, and it is hardly a coincidence that all of the early civilizations that have been discovered are in the neighborhood of that isotherm. (See Fig. 4.) Until man had developed his first and most critical invention, clothing, he could not migrate far from his place of origin. Clothing permitted him to keep a thin layer of warm air between his skin and the other world, insulating him against the changes in external temperature that he could not support. One of the first penalties man paid for migrating from place to place was a shortened life span. We still do not know how long his life should be. There are certain groups in the medical profession that believe the length of life actually built into the average man is about 150 years. For example, in one hundred years the average length of life has increased by exactly 100 percent. Our protections are still too crude and ineffective to realize the optimum life span, but man could live out this tremendous life span where he controls all the conditions of his environment.

Optimum Lighting Conditions

The optimum climatic condition which man strives to maintain and which promises him a longer life is accompanied by certain optimum luminous conditions. Man has a much wider range of tolerance for light levels than he does for heat levels, and artificial lighting levels are now available that are inside the natural daylight range. However, his comfort and safety are endangered if he is subjected to light outside this natural range. Man's response to the manner of distribution of the light in the total field of view is



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very marked and critical; and, assuming a moderate but adequate amount of light to start with, the *distribution of the light becomes the most important feature of design.*

The optimum range of variations in the distribution of light in the natural field of view represent the boundaries of the lighting conditions within which men can operate with greatest safety and unconscious security. They also represent the goal of the lighting designer as they can be used as guide lines in the design of artificial lighting systems. When the distribution of an artificial lighting system falls between these lines, workers will be physiologically alerted to their surroundings and will be as safe, from falls, collision and similar orientation accidents, as lighting can make them. The designer takes the architect's or engineer's drawing of the space to be lighted, and by means of a special spherical protractor he prepares an accurate spherical perspective of the job. (See Fig. 5.) He then computes the various brightnesses that the proposed lighting system will cause and marks them on the perspective. From these and the relative areas they occupy he can determine the data needed to draw the flux diagram. The distribution of the light that can be expected in the interior of a room should fall between the natural guide lines and provide a lighting distribution to which the average person will be fully adapted, and an environment in which he will be fully alerted physiologically, as far as his visual sense is concerned.

Changing Light Distribution

If the light distribution falls outside of the natural guide lines the proposed design needs correction. The trained lighting engineer, who knows how to read a diagram, also knows what correction, and how much correction is needed.

An example of such a situation is shown in Figure 6. There is an excess of light in the left-hand zone of the chart and a deficiency throughout the right half of the chart. This means that the walls, floor and floor equipment are not returning enough light to the worker's eyes. Finishes are too dark and act as absorption areas, that is, blotters for light. The figures at the left-hand side of the chart tell how much light is coming from each part of the field of view, and therefore, how much less is needed in one part, and how much more in another. These modifications can be made by changing the reflection factors, that is, the finishes of the surfaces involved, by the amounts indicated in the diagram.

The original finishes called for reflection factors of: ceiling, 80 percent; walls, 50 percent; floor, 10 percent; and desks, 10 percent. The corrected finishes kept the same ceiling finish, but changed the window wall from 60 to 50 percent. The other walls remained unchanged. The major correction was to the floor, which went from 10 percent to 30 percent, and to the desks, from 10 to 40 percent reflection factor. As a result of these changes the amount of light now being returned to the worker's eyes from the lower part of the field of view, and thus adapting them to a higher level of visual activity, is more than twice what it was before the change in finishes. This change was accomplished without the addition of a single lighting fixture, lamp or watt of electricity. (See Figure 7.)

Fig. 8 Local lighting without general illumination causes glare and eyestrain.

Fig. 9 Balanced lighting enables worker to shift eyes from work without danger.

As the lighting distribution is a result of the way the lighting units send light to the environment, plus what the environment does to that light, proper lighting for safety requires first, adequate control of the light as it leaves the equipment, and also control of the light by all the surfaces illuminated in the field of view. Control of the light as it leaves the surfaces in the field of view is a matter of the color and finish of the surfaces. The lighting designer can determine the brightness of the various surfaces that will be caused by the type of lighting units being considered, only when he knows beforehand what colors and finishes the surfaces will have. Control of the light as it leaves the lighting units is a matter of the proper design of the units.

Color and Lighting

The desirable colors for use on the surfaces are arrived at in this way. There are three possible reactions to color. You like it, don't like it, or are indifferent to it. A statistical study to separate these three classes of colors has been made. The colors which produced a low, or even neutral emotional response are ideal for general work surroundings. They provide backgrounds that are excellent for the necessary brightness manipulation by engineers, and do not engage any of the worker's energy in the blind alleys of emotional response. Thus the environment protects the worker but does nothing to him—punishes him in no way. If he wants to be stimulated he goes to a night club, where the coloring is designed for the opposite effect. As soon as you design

(Continued on page 67)

HOW MUCH CAN YOUR FLOOR HOLD?

DESIGN requirements for structural elements in buildings depend on a knowledge of the loads to which these elements may be subjected. These loads include dead loads, live loads, snow loads, wind pressures, and earthquake forces. Dead loads consist chiefly of the weight of the building itself, while live loads consist of the variable loads due to human occupancy, e.g., the weight of equipment, furniture, other movable goods or materials, and human beings.

Because of the meager information available on live loads on floors in typical occupancies, a study of such loads in business, industrial, and storage occupancies has been undertaken by the National Bureau of Standards in cooperation with the Public Buildings Service. While necessarily limited to a few buildings, the data obtained were quite complete, containing sufficient detail for a comparative study of the variation in loading on different parts of the same floor. The results obtained, together with summaries of surveys made some years earlier, should be of considerable interest to designers of buildings and to building officials.

Building codes require that all buildings shall be designed to carry their loads safely, and give a list of minimum assumed live loads for the more common occupancies. Actual loading may differ from the values given, but in practice most buildings are probably designed at the minimum values. It is thus important that these values represent the worst conditions for which it is reasonable to provide.

In design practice, allowance for live loads is made by assuming loads for various classes of occupancy. The live-load values which have been accepted in various building codes show good agreement, even though they are based on relatively little data; but it is difficult to estimate the validity of the figures used. The expense and trouble of actually weighing materials and equipment in buildings probably account for the lack of such data.

Since there have been few cases of building collapse due to incorrect load assumptions, there has been no compelling reason for intensive investigations of loads. Now,

with new materials constantly coming into use, and with the increasing urgency for the conservation of materials, the problem of what assumption the designer shall make for a given live load has become important.

Early Load Studies

One of the earliest studies on the weight of building contents was made by the Department of Commerce Building Code Committee, which prepared a report in 1925 on loads in dwellings, hotels, and other residential occupancies, hospitals, schools, office buildings, library stack rooms and manufacturing buildings of various kinds. In 1946, the Public Buildings Service announced the results of an investigation of loadings of two Federal office buildings in Washington. In 1945, the National Bureau of Standards published a report containing the recommendations of the Sectional Committee on Building Code Requirements for Minimum Design Loads in Buildings—A58, of the American Standards Association.

In the PBS-NBS survey, actual weights of equipment and furniture were obtained for 2 department stores, 2 mattress factories, 2 clothing factories, 2 furniture factories, 2 printing establishments and 2 warehouses. All movable equipment was weighed or estimated, and an allowance made for human load. Fixed pieces of equipment, such as radiators, were not considered part of the live load. Maximum measured live loads obtained in the survey are listed in Table 1 together with the median loads. In the following sections, brief discussions are given of typical occupancies, with techniques of obtaining the data, and typical building code requirements.

Residential Occupancy

Most building codes permit a minimum assumed live load of 40 pounds per square foot for residential occupancy. There are occasional instances where codes permit a figure of 30 pounds per square foot to be used for upper floors of single-family dwellings, and the same figure has been advocated by some authorities for general use throughout dwellings.

Various reasons have been advanced for the selection of a load of 40 pounds per square foot for this occupancy. Some authorities have pointed out that it takes care of maximum possible loading when persons are assembled at teas, funerals, and other occasions. Others believe that the figure was not intended to represent the actual load in a dwelling, but was selected because a wood-joist floor designed for a lesser load was generally considered too limber for the comfort of the occupants. From the latter point of view, the use of the 40 pound figure is thus an indirect method of obtaining the desired rigidity in wood-joisted construction. Although there have been numerous estimates and assumptions made as to live loads in this occupancy, no published figures obtained from weighing the contents of dwellings have been found.

Business Occupancy

The minimum assumed live loads permitted for business buildings by building codes vary from 50 to 80 pounds per square foot. More attention has been given to loading in office buildings than in any other occupancy.

Most office loading is in a zone within 3 feet of the walls, but the designer must allow for library shelves and double filing cabinets not near partitions and for the collection of furniture in the middle of the room during cleaning or moving. Live loads are found to be lighter near the exterior walls of the building; filing cases, cabinets, safes, bookcases, and bins are usually located against blank interior walls. In earlier studies, several instances were found where 2 adjacent floor bays supported average loads of 25 pounds per square foot or more, but in no case were 2 adjacent bays found loaded in excess of an average of 40 pounds per square foot. Weight of employees was found to add from 0.9 to 1.75 pounds per square foot of floor area.

Mercantile Occupancy

The term "Mercantile Occupancy" is not used in all codes, but it covers such occupancies as stores, shops, salesrooms, and markets. For these, the permissible minimum design live load given in building codes ranges from 75 to 125 pounds per square foot. The PBS-NBS survey of two department stores was made when few people were present. To account for the large human load during special sales or at Christmas, there is given, in addition to the measured load, a load "with aisles crowded" which is an increase of 60 pounds per square foot for aisle space.

Assembly Occupancy

Assembly occupancy includes theaters, dance halls, auditoriums, churches, and schools. Building codes recommended for national or regional use and building code standards give permissible minimum live loads of from 50 to 60 pounds per square foot for orchestra floors of theaters and for floors of assembly halls with fixed seats, and 100 pounds per square foot for those with movable seats. Dance halls are assigned 100 to 120 pounds per square foot. School classrooms with fixed seats are required to be designed for 40 to 60 pounds per square foot, and those with movable seats from 40 to 100 pounds.

Industrial Occupancy

The industrial classification contains widely varying examples of floor loading, since it includes occupancies involved in manufacturing, fabrication, and assembly of all kinds of industrial products. Recommended building codes give minimum design loads of from 75 to 125 pounds per square foot for

Superstitious

. . . . about Friday the thirteenth?

Mr. Potts peeped at the calendar and almost popped back into bed.

But, tucking his rabbit's foot in a back pocket, he headed for work. Got there in time to hear the receptionist say, "Eleven . . . twelve . . ." Then his feet skidded out from under him, landing him on his rabbit's foot.

"Bingo!" said the receptionist.

The girl apologized. "Sorry, Mr. Potts, but you were the thirteenth person to slip on the floor and today is Fri—."

"I know," said Mr. Potts.

The day's first visitor, a Walter LEGGE Company representative, was waiting for him.

"With all due sympathy," the LEGGE man began, "this may very well be your *lucky* day."

Mr. Potts rubbed the bruised part of his anatomy. "How so?"

"Friday the 13th would have been just an ordinary day if on Thursday the 12th your cleaning crews hadn't waxed and buffed your floors. The wax gets slick as an ice pond from walking feet. LEGGE *Safety* polishes make your floors gleam without *slipperiness*, protecting both floors *and* personnel. They reduce slip-accidents up to *99%*."

"This stuff must cost a fortune," put in Mr. Potts, doubtfully.

"It costs less than you're paying now. Blue chip hospitals and commercial and industrial buildings find our products do a more effective job *longer*. Their floors rarely need stripping and reapplying. You buy far less polish. And you save up to *50%* on labor."

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Firm_____

Street_____

City_____ Zone_____ State_____

(For further details, use Key # H-13 on free Inquiry Card on page 73)

light manufacturing. For heavy manufacturing, some give values of from 125 to 150 pounds and others do not assign any particular value. In the PBS-NBS survey, a number of different methods were employed to determine the loading. In some cases, all material found in a given area was weighed; in others, typical items were weighed and the total weight computed. Where neither of these methods seemed practicable, weights were obtained from the plant manager, manufacturer, or catalogs. In some instances, equipment was measured and its weight calculated from known or assumed densities. Although there is a tendency to place heavy machinery on ground floors or on special foundations reaching to the ground, some machines encountered in the survey were on upper floors. In such cases, the machine weights were averaged over areas considerably greater than those immediately adjacent to the machines.

Storage Occupancy

Live loads on warehouse floors vary widely. Building codes give permissible minimum design load figures for light and heavy storage. In the case of light storage, the range is narrow, from 120 to 125 pounds per square foot, while for heavy storage a minimum value of 250 pounds is customary. For the 2 warehouses surveyed, loading was determined by noting weights marked on barrels and other containers and making an allowance of 150 pounds each for persons normally found in a given area.

Variation in Loading

The data show fairly large differences in loading on different areas within the same occupancy. In some cases, such as libraries or storage rooms in office buildings, it may be possible to anticipate and to provide for unusually heavy loads. In other occupancies, as in department stores, there may be frequent shifts of goods from one part of a floor to another or from floor to floor in response to changes in sales policy, seasonal demands, or other considerations, with the result that unit loads on given areas may change several hundred per cent. In the case of a small area, the total load will be the minimum unit load multiplied by the area. For larger areas, however, a reduction is considered permissible for loads carried by columns and girders, and sometimes beams, since such members seldom, if ever, are loaded to the extent of the unit live load multiplied by the total area supported.

The data obtained in the surveys afford code writers an opportunity to correlate code requirements with specific examples; the more extensive and detailed such surveys are for a given occupancy, the firmer are the conclusions to be drawn from them. The data represent not the most severe loading possible, but the actual average loading in each case on a given area of a given occupancy. It appears that a large percentage of the floor area in most occupancies is much less heavily loaded than the most heavily loaded bay. This suggests possible further economies in the design of members carrying large floor areas.

For more complete details of this study, see "Live Loads on Floors in Buildings," National Bureau of Standards Building Materials and Structures Report BMS 133, by J. W. Dunham of PBS, and G. N. Brekke and G. N. Thompson of NBS; available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

TABLE 1. LIVE FLOOR LOADING

Type of occupancy	General code minimum	PBS-NBS Survey data Median [a]	Maximum [a]
	lb/ft²	lb/ft²	lb/ft²
Residences	40	...	...
Office buildings	50 to 80	...	...
Department stores	75 to 125	...	...
Store No. 1	...	42	61
Store No. 2	...	35	67
Assemblies	75 to 100	...	...
Light manufacturing	75 to 125	...	...
Mattress factor No. 1	...	13	41
Mattress factor No. 2	...	22	60
Men's clothing factory	...	13	47
Dress factory	...	7	60
Furniture factory No. 1	...	17	98
Furniture factory No. 2	...	8	120
Heavy manufacturing	125 to 150	...	...
Newspaper plant	...	18	93
Printing plant	...	52	168
Light storage	120 to 125	...	...
Heavy storage	250	...	...
Warehouse No. 1	...	82	257
Warehouse No. 2	...	33	304

[a] *Not including partitions or radiators, but including a factor for maximum human load.*

Picture by courtesy of B. F. McDonald Co.

Eye Tool-Up

(Continued from page 161)

er's vision before discharging or demoting him for poor work. Many workers, particularly older ones, have pretty good distance vision but wear glasses for reading. They try to wear their reading glasses at work, but find they won't do. Such glasses are apt to blur the distant and intermediate vision, and may not even be entirely suitable for close work.

In such cases, the specialized spectacle, with two or three seeing distances, is the thing. It can become about the most valuable tool in the worker's box.

Pictures by courtesy of Better Vision Institute, Inc.

For detailed descriptions of eye protection devices, see pages 87–122 of "Best's Safety & Maintenance Directory," 1952–53 edition.

scaffolding goes underground!

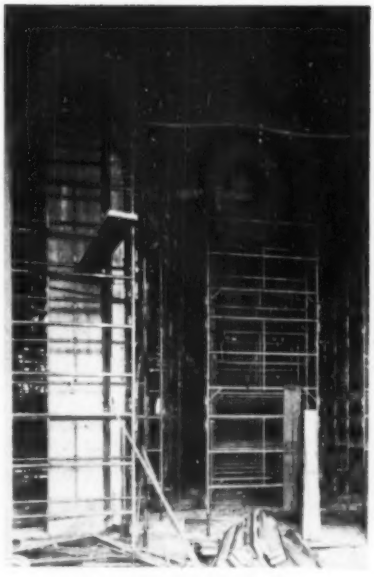
Third of a feature series on Ladders & Scaffolds. Previous articles appeared in the June & July issues.

TO MEET the requirements for economical, easily erected shoring, contractors have found another time saving application for steel panel scaffolding. Standard panels were used to reduce shoring costs at the Gateway Center Buildings in Pittsburgh, Pa.

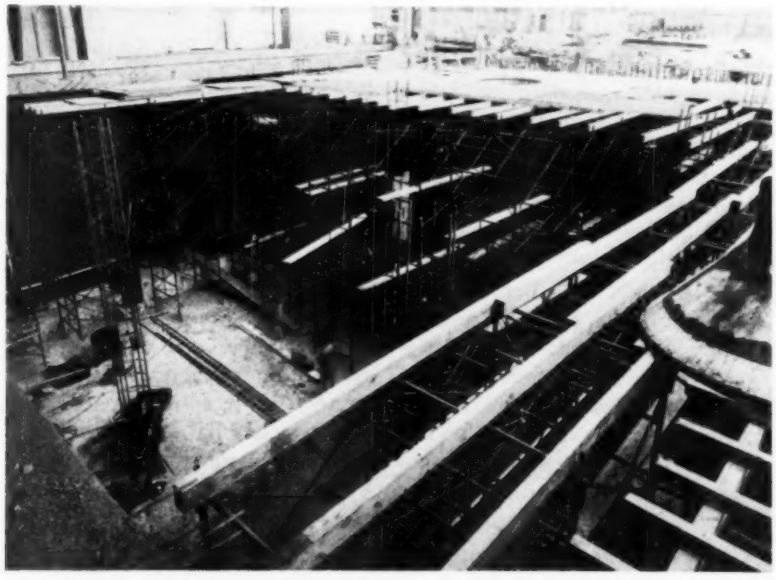
The Slattery Contracting Company, New York, N. Y., and the Harrison Construction Company, Pittsburgh, Penna. combined to subcontract the excavation and the concrete work for the buildings. The basement of building No. 3 extends beyond the outside building walls giving two areas, one on the southeast and one on the southwest, approximately 75 ft. square x 23 to 30 ft. high. These areas carried a 23 inch reinforced concrete slab on which there would be 4 ft. of earth fill for landscaping.

The shoring of this slab would have been quite expensive if wood or post shores had been used. The slab thickness gave an unusually heavy load and the height of shoring would have necessitated using two post shores with a deck between to reach the underside of the slab.

The use of steel scaffolding for this below-ground job reduced the amount of wood in the form-work to a minimum—4" x 6" sills on approximately 30" centers resting directly on scaffolding; 3" x 4" joists on approximately 18" centers; and ⅝" plywood. Considerable labor was saved as a result of the quick erection of scaffolding compared to wood or post shores. Adjustable bases on the scaffold gave 16½" of adjustment for leveling up for the initial installation. Upon stripping down, the adjustable bases were used to lower the scaffolding to permit removing of the top scaffolding sections. The remaining scaffold was used as a work platform for stripping down the concrete forms. As a result of the obvious savings in time and material possible, Slattery-Harrison rented the necessary scaffolding equipment for the southeast area, which was also used for the southwest area and other work on this project.



Final stages of shoring and form work



Scaffolding installation when about half completed shows sturdy shoring pattern

The large picture shows the scaffolding installation when about half completed. Ten runs 5 ft. wide x 23½ ft. high and 75 ft. long, spaced

approximately 26" apart, supported on adjustable bases were used to carry the forms for the slab, column caps and 8" x 17" curbs down both sides. The 23" slab was designed with 28" supporting columns on approximately 25 ft. centers with 7 ft. diameter caps, to be an integral pour of 3" slump concrete. Total load of concrete and forms on the scaffolding exceeded 300 lbs. per square foot. Live load consisted primarily of the workmen plus the impact of the concrete discharge from a crane bucket. No visible deflection was noted throughout the pour.

The second picture shows the final stages of shoring and form work. Erection of scaffolding shoring and forms was completed in a little less than four days.

This application of steel panel scaffolding was satisfactory in every respect. A similar pour was made for the other basement area. In the meantime, the contractors used the equipment for other work on the project.

Pictures by courtesy of Universal Mfg. Corp.

For detailed descriptions of scaffolding equipment, see pages 384–399 of "Best's Safety & Maintenance Directory"—1952–53 edition.

President Calls For More Job Safety

PRESIDENT Eisenhower has called upon Secretary of Labor Martin P. Durkin to intensify the work of the President's Conference on Occupational Safety, a voluntary organization of top leaders from American business, labor, insurance companies, education, State and Federal agencies and private safety groups devoted to reducing accidents in the nation's workplaces.

"An annual toll of 15 thousand deaths and 2 million injuries occurring in the course of employment is an economic and social waste we cannot afford. Such injuries mean a loss to the worker in health and earning power, to the employer in lower production and higher operating costs, and to the nation in manpower skills. Management, labor and public and private agencies share an obligation to safeguard their fellow citizens employed in the workplaces of the nation. It is appropriate that the Federal Government provide a means of bringing together these vast resources to curb accidents to workers," the President writes.

The Chief Executive also expresses the hope that states having basic authority over the health and safety of workers, "will be stimulated to quicken and extend similar endeavors."

The Secretary of Labor will serve as General Chairman of the Conference, Vincent P. Ahearn, Executive Secretary of the National Sand and Gravel Association, as its Executive Director, and William L. Connolly, Director of the Labor Department's Bureau of Labor Standards, as Chairman of the Conference Coordinating Committee.

Safety Equipment Loan

AT a mill of the West Virginia Pulp & Paper Company, outside contractors working on the property are contacted immediately on their arrival by Robert K. Meredith, the mill's Safety Director. His job is to find out if the contractor's workmen are provided with safety equipment. If not, Mr. Meredith offers the free use of such items of mill safety equipment as "hard hats," or protective helmets; protective clothing; goggles and, if needed, respirators and face masks, together with full use of the mill's first aid facilities.

The slogan "Safety for All," it is explained by Mr. Meredith, is the one under which the mill's safety program operates, and it applies not only to company personnel but to everyone working on plant property. The free loan ot safety equipment is a definite part of the safety program. "We believe that a safe job is an efficient one," Mr. Meredith says, "and the fact that our workmen seeing others making use of safety equipment brings home to them the sincere desire of our management that everyone should work in safety."

A Safety Man's Credo

SPEAKING at a session of the Production and Chemical Conference of the American Gas Association in New York City, Mathew M. Braidech, research director of the National Board of Fire Underwriters, made clear that the problem of safety and the safeguarding of human life and property calls for a continuing program of endless effort.

In discussing safety, Mr. Braidech also pointed out these 3 related facts:

1. A certain degree of risk is involved in every human undertaking.

2. The degree of danger is largely determined, not so much by the inherent nature of things, but by the faulty circumstances surrounding their handling or use, brought about by such human frailties as inattention, misjudgment, lack of knowledge and skill, and incomplete provision and safeguards.

3. There is no such thing as "absolute safety," rather a definite organized effort is being expended to insure an acceptable degree of "reasonable safety."

Thus safety, according to Mr. Braidech, connotes exercise of care, a better way of doing something to avoid injury or risk and includes the correction of dangerous practices and hazardous conditions.

Concluding, he said the formal development of practical safety measures constitutes only one phase of a good safety program. "An equally important phase of any safety effort is the creation and maintenance of a receptive state of safety-mindedness," he declared. "This," he added, is something that cannot be coded or legislated, it can only be brought about through the broad dissemination of proper information and the persistent and sincere application of recognized safe practices."

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(For further details, use Key # H-14 on free Inquiry Card on page 73)

Industrial Safety Films

Film Shows Safety In Freight Operations

THE Pennsylvania Railroad has produced a new training film "The Breaking Point" which has just been completed by Unifilms, Inc., for the road's Safety Department. The story of how the Pennsylvania workers are reducing the incidence of personal injury as well as employing greater care in the efficient handling of billions of dollars' worth of freight is told in narrative style in the 16 mm. color and sound motion picture.

Available for showing to employees, shippers and other interested groups, the picture is twenty-four minutes in length and was shot in actual freight terminals, rail yards and offices over the P.R.R. system.

The film tells how employees in stations and train service are working together to reduce loss and damage to goods in transit and with safety to themselves. It shows the right way and the wrong way to do the job and emphasizes that the right way is the "good" way for employees as well as for shippers and the railroad.

☆ ☆ ☆

Safety Engineering Film

A FILM, Design for Safety, is the report of the University of Maryland's experiment in integrating safety into its engineering curriculum. Of interest both to educators, who are concerned with the techniques of integration, and to safety and management personnel, whose attention is directed to broader phases of safety, the story of integration is told through the experiences of an engineering student.

From his first safety assignment in a freshman course in English composition through fourth-year work in engineering design, the film follows the student into the library, the classrooms and the shops of the university, showing how at each step in his education, safety is so woven into engineering as to become an essential part of his thinking and practices.

The film is available in 16mm. size only, from Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D.C. Running time is 27 minutes.

☆ ☆ ☆

Protection Emphasized In New Lightning Film

"LIGHTNING MASTERS," a new 30-minute color sound film, has been announced by the General Electric Company's Distribution Transformer Department at Pittsfield, Mass. This new film release depicts the phenomena of natural lightning and tells the story of lightning research and the development of modern protective equipment.

The film cites the important advances made over the past three decades, during which lightning has been resolved from a mysterious force of nature to quantitative engineering facts.

Through a series of animated drawings, the movie portrays how lightning is generated by nature; how a lightning bolt strikes; how a lightning arrester works to protect power lines and equipment from damage. In blueprint style the film shows what happens on an open- and grounded-end line to insulation and to equipment when lightning releases high voltage travelling waves on a power line.

The film shows experiments with high voltage sixty cycle power, using both single and three phase facilities. Such tests, the film explains, have been instrumental in developing better insulations and more efficient designs for power apparatus. The film illustrates the various types of lightning protective equipment that are used to protect each segment of a power system from the generating station to the watthour meter.

Though designed to be shown to electric utilities, this film will be available through the company's field offices throughout the country to other interested groups, such as large industrial users of electricity, colleges, and technical societies.

☆ ☆ ☆

Film Shows Uses of Fire-Resistant Canvas

A NEW 20-minute, free-loan 16 mm. color and sound motion picture has just been released by The Princeton Film Center, Inc. The film is sponsored by The Philadelphia Textile Finishers, Inc., Norristown, Pennsylvania.

The film affords the viewer a thorough and stimulating review of the applications of canvas in industry, commerce, public service, and everyday life. It demonstrates the use of canvas as protection against fire, water, weather and mildew. The importance of research and testing in the treatment of canvas is effectively presented.

"Flamefoil Canvas Protection" should be of special interest to industrial and commercial groups, to business and trade associations, to purchasing agents and other buyers and users of canvas. Because of its entertaining treatment, the film will interest service clubs too. Free bookings may be arranged with The Princeton Film Center, Inc., Princeton, New Jersey.

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what safety and maintenance products to use

when to use them

who makes them

where to buy them

Single Copies $5.00
(Quantity prices on request)

ALPHABETICAL PUBLISHING COMPANY, INC.

"SAFETY MAINTENANCE" Salutes a Safety Idea

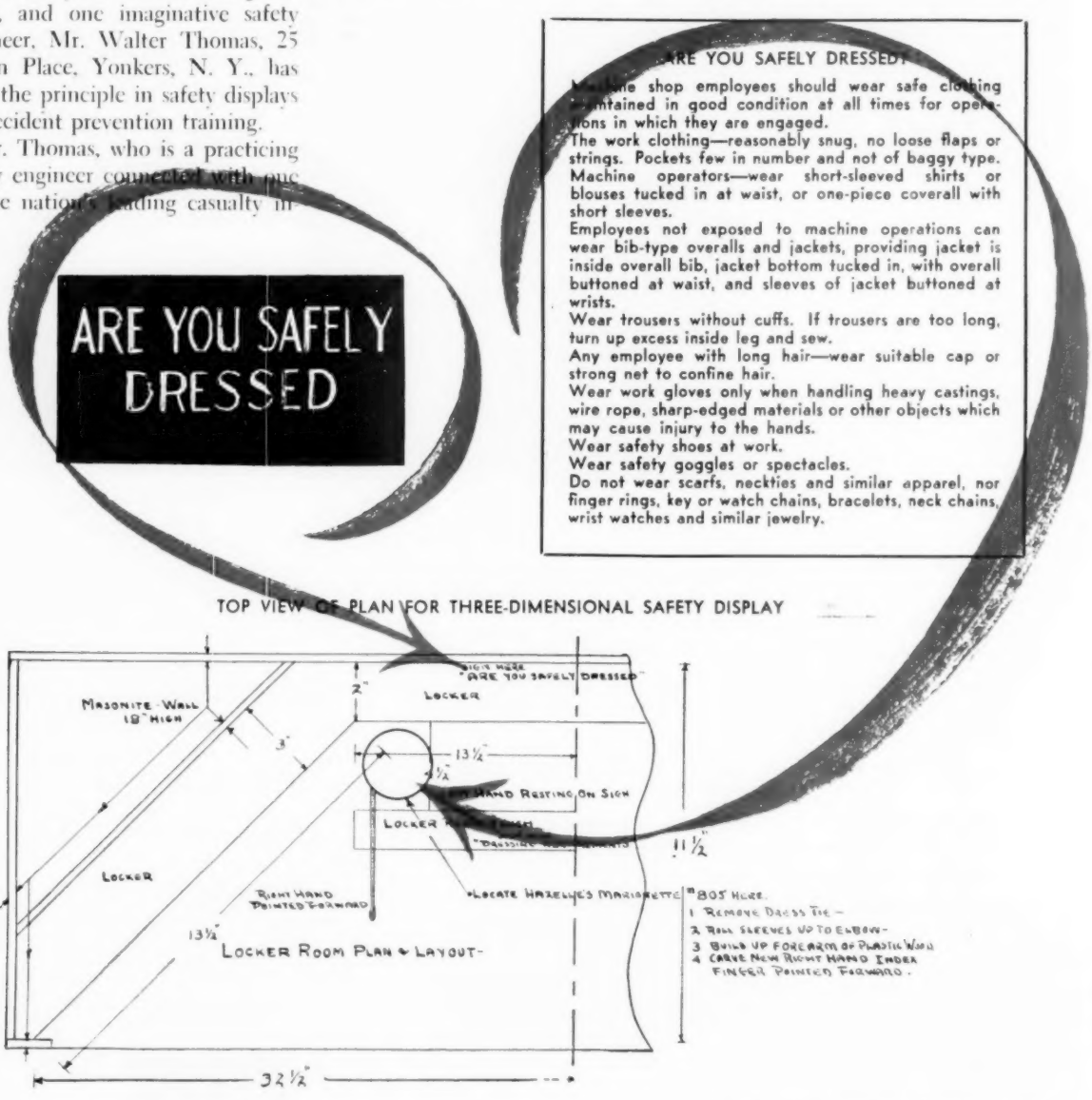
A "Safe Clothing" display uses third dimension to attract workers' attention.

3 D Safety Displays

THERE is a good deal of tumult and shouting these days about three dimensional movies, but behind all the ballyhoo is the very real fact that an illusion of depth does attract attention and create a greater response from the viewer. In fact, the attention-arresting features of a third dimension have been utilized for several years in advertising displays, and one imaginative safety engineer, Mr. Walter Thomas, 25 Arden Place, Yonkers, N. Y., has used the principle in safety displays for accident prevention training.

Mr. Thomas, who is a practicing safety engineer connected with one of the nation's leading casualty insurance companies, points out that verbal messages are generally less effective than visual messages. The latter, as seen in articles, advertisements, posters or signs, leave a definite impression upon the viewer and can be recalled in many instances when a particular product or item is desired.

To give more drawing or impression power to the visual message, an additional dimension can be added to advertising sketches, photographs and plans, thereby creating an object or figure with length, width and breadth. To further the effective-


ARE YOU SAFELY DRESSED
ARE YOU SAFELY DRESSED?
Machine shop employees should wear safe clothing maintained in good condition at all times for operations in which they are engaged.
The work clothing—reasonably snug, no loose flaps or strings. Pockets few in number and not of baggy type.
Machine operators—wear short-sleeved shirts or blouses tucked in at waist, or one-piece coverall with short sleeves.
Employees not exposed to machine operations can wear bib-type overalls and jackets, providing jacket is inside overall bib, jacket bottom tucked in, with overall buttoned at waist, and sleeves of jacket buttoned at wrists.
Wear trousers without cuffs. If trousers are too long, turn up excess inside leg and sew.
Any employee with long hair—wear suitable cap or strong net to confine hair.
Wear work gloves only when handling heavy castings, wire rope, sharp-edged materials or other objects which may cause injury to the hands.
Wear safety shoes at work.
Wear safety goggles or spectacles.
Do not wear scarfs, neckties and similar apparel, nor finger rings, key or watch chains, bracelets, neck chains, wrist watches and similar jewelry.
TOP VIEW OF PLAN FOR THREE-DIMENSIONAL SAFETY DISPLAY
MASONITE WALL 18" HIGH
LOCKER
LOCKER
RIGHT HAND POINTED FORWARD
LOCATE HAZELLES MARIONETTE
"805 HERE.
1 REMOVE DRESS TIE—
2 ROLL SLEEVES UP TO ELBOW—
3 BUILD UP FOREARM OF PLASTIC WOOD
4 CARVE NEW RIGHT HAND INDEX FINGER POINTED FORWARD.
LOCKER ROOM PLAN & LAYOUT
32½"

ness of this type of display, sound, motion and illumination may be added in whole or in part.

Mr. Thomas has found that many concerns are using three dimensional displays for such purposes as advertising, training and educational programs, and he believes that the sellers of accident prevention should adopt this new tool for training and education.

He adds, "It is rather unfortunate when displays or scale models are mentioned that the prospective users, whether they are manufacturers of safety equipment, safety department personnel, or others, immediately visualize a probable high cost. However, let me point out that such is not the case, and that the cost is not an important consideration. Anyone who is handy with his hands, has an ability to sketch and read a plan, plus some improvising ingenuity can produce the required displays. The most important point is to analyze your specific requirements as to the type of display needed, remembering that you should deliver a positive message—one that shows the safe method of doing a particular operation. It must also be remembered that these displays need not be confined to operations, but can cover practically any subject desired."

Illustrated here is one of the safety displays developed by Mr. Thomas to instruct employees on how to dress safely for the job. As shown in the plan drawing, such displays need not be large nor elaborate to be effective. In this particular scale model, Mr. Thomas used a locker room background with a large sign in back, "Are You Safely Dressed?", and a seated marionette holding a placard that gives pointers on how to dress for safety.

Inquiries concerning details and specifications can be obtained by addressing the Editor of SAFETY MAINTENANCE & PRODUCTION. The idea for these displays will not be patented and the details are available without charge or obligation to any industrial organization as a gesture of cooperation by Mr. Thomas in the interest of accident prevention.

He scoffed at safety breathing equipment . . .

. . but he finished the job wearing a

Scott Air-Pak
(TRADE MARK)

"Scott Air-Pak GIVES ME PLENTY OF AIR, KEEPS ME FEELING COOL INSIDE HOT TANKS!"

An Eastern dye plant needed a painting job done on the inside of a large tank. Although the paint was of a particularly obnoxious compound, the man hired for the job scoffed at the offer of safety breathing equipment. He entered the tank, only to stay inside for six minutes. Making a second attempt to paint the interior without protection, he lasted only one-half minute. The third time he put on a SCOTT AIR-PAK with a hose attached to an air cylinder and stayed in the tank for *three hours*, completing the entire job. Questioned as to SCOTT AIR-PAK's operation, he said "I never knew that working inside of a hot tank could be so cool and comfortable — and safe. I'm taking no more chances!"

Hundreds of other industrial plants throughout the country have discovered that using SCOTT AIR-PAKS is the safest, most efficient way to complete work in hazardous atmospheres quickly, easily, economically.

Call in your Safety Equipment Dealer or
WRITE TODAY
for full information.

ESTABLISHED IN 1932
Scott
FOR SAFETY - FOR SERVICE

SAFETY EQUIPMENT DIVISION
SCOTT AVIATION CORP.
217 ERIE ST., LANCASTER, N. Y.
CANADA: SAFETY SUPPLY CO., TORONTO — BRANCHES IN ALL PRINCIPAL CITIES
EXPORT: SOUTHERN OXYGEN CO., 157 Chambers Street, New York 7, N. Y.

(For further details, use Key # H-15 on free Inquiry Card on page 73)

LASTS LONGER — May be used again and again —

BECAUSE, it's not made from cheap cotton, but Dupont's cellulose sponge with countless tiny pores to cool by evaporation.

Cheapest in the Long Run!

WORKERS praise its comfort features. Sweat doesn't fog glasses or goggles . . . doesn't get into eyes and smart!

PLANT MANAGERS are delighted when production goes up as much as 10% in hottest summer weather.

SAFETY ENGINEERS talk about evaporation cooling the whole body because the pores of sponge cellulose act like a wick. Drybrow holds 20 times its weight of water! No wonder it's the Nation's Sweat Band! — praised by every user.

FREE!
TRY A DRYBROW AT OUR EXPENSE

STOP THESE ANNOYING DROPS OF SWEAT!

Wearing a Drybrow is the next best thing to a cool shower. Evaporation of perspiration through thousands of cellulose sponge pores cools as nothing else can. Try one and be convinced. Sample sent FREE; or order 1 to 39 boxes at $4 each or $3.50 a box for 40 or more. (Each box contains 25 of the famous Drybrow Sweatbands.)

American Allsafe Co., Inc.
1246 Niagara St. • Buffalo 13, N. Y.
(Use Key # H-16 on Inquiry Card on page 73)

SAFETY ACHIEVEMENTS

THE accident frequency rate of all Celanese Corporation of America plants in the first 3 months of 1953 was 1 per million man-hours worked, as compared with a 1952 average of 9.06 for all industry. This record has been announced in connection with the award of the Harold Blancke Safety Award for outstanding achievement in accident and fire prevention to the Bishop, Texas chemical plant. The Bishop plant established a record of 4,112,380 man-hours worked without a disabling accident.

For the entire year 1952 the accident frequency rate for all Celanese plants was 2.4 per million man-hours worked, well below the national average. For the company's chemical plants alone—the accident frequency rate was zero.

SIX individuals and 6 organizations are the recipients of the National Committee for Traffic Safety's annual Citation Awards for outstanding contributions to highway safety in 1952.

The U. S. Junior Chamber of Commerce is the winner of the first of the national awards. The award is based on the Chamber's nationwide promotion of the teen-age road-e-o, designed to emphasize the importance of driving skill over speed. Last year, the first year of the road-e-o, saw 226 tests of driving skill conducted in 34 states, sponsored by local Chamber organizations with college scholarships as prizes.

A special national award goes to the Inter-Industry Highway Safety Committee for its sustained efforts in highway safety. Made up of representatives of the automobile and allied industries, the committee last year made available to high-schools for driver education, 6 thousand dual-control cars, sponsored a month-long car check program all over the country which covered more than half a million vehicles, and has sponsored teen-age traffic conferences throughout the nation.

The Atlantic Refining Company's program of providing trained instructors and dual-control cars to high schools for the purpose of checking all licensed drivers and conducting skill tests, earns the company a special citation. The Anthracite Motor Club wins an award for its outstanding school patrol, driver education and pedestrian protection programs. The continuing public safety program of the Brandenberg Young Business Women's Club, a program which includes films, posters, parades, surveys and encouragement to local law enforcement agencies, wins the club a special award. A year-round program of training children in good safety practices earns the Los Angeles Area Camp Fire Girls a Citation Award.

Leading the list of individual citations is one for Robert L. Anderson who is credited with originating the teen-age road-e-o sponsored by the Junior Chamber of Commerce. Mr. Robert I. Catlin, for efforts "above and beyond" his duties as a safety council chairman, is recipient of a special award. He helped draft the compulsory motor vehicle inspection law for Connecticut and a bill authorizing issuance of drivers license by birth month. Owen F. McDonnell has been a guiding spirit in establishing Philadelphia Citizens Highway Safety Board and in encouraging the local clergy to deliver "safety sermons" from the pulpit during "Thou Shalt Not Kill Week," sponsored by the

board. Mrs. Thomas V. Anderton, now safety chairman for Virginia State Women's Clubs, receives her citation for her work in organizing public safety interest in Roanoke, Va. A posthumous citation for his work with school safety patrols is awarded to Dr. George W. Walter of Racine, Wisconsin. For his service in promoting car check programs and establishing driver education classes, Lester A. Olson wins a special citation.

THE J. F. Pritchard Company of Kansas City, Missouri, design engineers and constructors for chemical, gas and petroleum Industries, announces the 1952 presentation of the Safety Recognition Key to Superintendent J. H. Burlingame. The Pritchard Safety award is a golden key that can be fastened to a watch or key chain.

The 1952 contest was a close race, and final standings were derived from the total number of man-hours lost through accidents in comparison with total man-hours worked. Mr. Burlingame had a record of 95,720 man-hours worked and a percentage of .0522 with only 3 medical accidents. This record is even more impressive when it is remembered that a medical accident does not constitute any lost time.

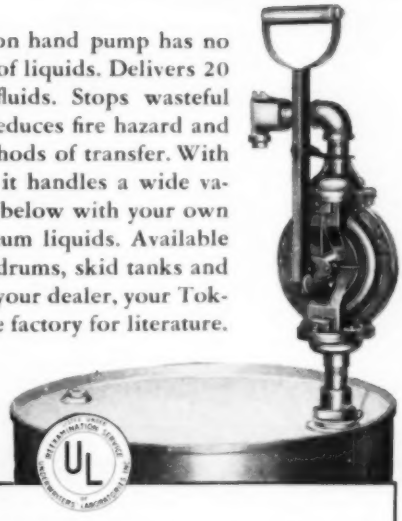
THE President's Safety Award, the highest safety honor in the American Cyanamid Company, went to the Beachville Quarry of North American Cyanamid, Limited at Ingersoll, Canada for its record of 990,000 manhours without a lost-time accident. The plant's record extended from July, 1947 to March, 1953.

The Chattanooga, Tennessee Plant of Cyanamid received the Safety Award of Merit for working 200,978 manhours from June, 1950 to January, 1953 without a lost-time accident. The Azusa, California plant received the Award of Merit for 830,294 accident free manhours, extending from September 1949, to March, 1953.

Every day more and more factory men tell us—

Tokheim hand pumps are safer, faster, more useful!

This new Tokheim double-action hand pump has no equal for speedy, safe handling of liquids. Delivers 20 gallons per minute of most fluids. Stops wasteful dripping and slippery floors. Reduces fire hazard and accidents common to other methods of transfer. With optional diaphragm and body, it handles a wide variety of products. Compare list below with your own needs. UL-approved for petroleum liquids. Available in hose and spout models—for drums, skid tanks and underground installations. Call your dealer, your Tokheim representative, or write the factory for literature.



QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

A Tokheim will handle a variety of liquids

Acetates • Alcohols • Aromatic & Chlorinated Solvents • Glycols • Ketones & Ethers • Petroleum Solvents • Plasticizers • Petroleum Products • Ammonia • Ammonia Hydroxide • Cutting Oils Flushing Oils • Lacquer Thinners • Anti-Freezes Castor oil • Caustic Soda Solution • Freon • Glycerine • Turpentine • Water • Wood & Vegetable Oils.

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1672 WABASH AVENUE, FORT WAYNE 1, INDIANA

Factory Branch: 1309 Howard Street, San Francisco 3, California

(For further details, use Key # H-17 on free Inquiry Card on page 73)

SEND THIS PERSONAL SAFETY MESSAGE

TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive... vivid... colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance... from every employee... every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work. They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size, 5½" wide x 8½" deep

...talks the worker's language!

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:
Nothing of a controversial nature that might offend or embarrass either management or labor is ever published in YOUR SAFETY NEWS!

INSIDE PAGES
(pages 2 and 3)

So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES WORK OVERTIME
There was a time when Safety Shoes were clumsy and uncomfortable but those days are gone forever. Today the Safety Shoe manufacturers offer hundreds of different styles and lasts to meet safety requirements. The modern Safety Shoes look the same as either dress or work shoes of any make, differing only in the addition of two ounces of steel toes.
Dress for Safety
SAFETY SHOES
Well fitted Safety Shoes now are good for on or off the job use. In fact many of us never wear anything else.
Ted: "My feet burn like blazes. Do you think a mustard bath would help?"
Ned: "Sure! There's nothing like a little mustard on hot dogs."
Be bold in what you stand for but careful in what you fall for.
Most of our troubles are caused by too much brass in the head and not enough in the back.
We think the temperament of women could be improved if they could get rid of their high heeled shoes.
FALLS
Falls are the second greatest cause of injuries in industry and a source of many severe cases. It is those two-level falls that really do the damage.
You can't be too careful when working with or on ladders—scaffolds—ramps—stairs or any elevation. You are just plain lucky if you don't break bones from bad falls of this kind.
Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
Never clutter up stairs or aisles. Help keep them free of tripping hazards and you may save some one from a bad fall. Maybe yourself.
FALLS KILL 60 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

VIVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

HOW TO ORDER

YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

Clip Out & MAIL TODAY!

ALFRED M. BEST COMPANY, Inc. • 75 Fulton Street, New York 38, N. Y.

Gentlemen:

Until further advised, please publish for us each month..... copies of YOUR SAFETY NEWS at .....¢ each.

☐ **Special Imprint** ☐ **Standard Imprint**

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25 to 99 copies	*	5½¢ each

★5½¢ each plus $3.00 per month for Special Imprint **F.O.B. New York, N. Y.**

"I Just Happen to Have . . ."

SALESMEN for the Theo. Hamm Brewing Co., St. Paul, Minn., carry an emergency kit to meet any eventualities the weather may concoct.

Paul Schuler, the company's personnel director, devised the emergency kit which includes: canned beef, sausage and beans and liquid chocolate, all of which heats itself with the addition of water and is ready to eat in 10 minutes; 2 chocolate bars, small packages of cookies, package of cigarettes, knife, fork, spoon, can opener, plastic cup, hand warmer, box of waterproof matches, flashlight and eye shield.

Packed separately for the salesmen are flares, a first aid kit, a fire extinguisher, hand warmer fluid, shovel and chains. Suggested additional equipment includes a heavy coat, overshoes, cap with ear flaps and heavy gloves. The ever-ready salesmen have been equipped with sleeping bags for emergency use. The men drive suburbans and can make room in their cars for sleeping by simply pushing their point-of-purchase advertising material to one side. Written instructions for the salesmen on how and when to use the various emergency items are furnished. However, ingenuity is sometimes necessary. One salesman found his hotel room too cold for sleeping one night, promptly went out to his car for his down-lined sleeping bag!

NYU Offers Courses In Accident Prevention

THE fall term, evening program in industrial and traffic-accident prevention training offered by the Center for Safety Education, New York University begins September 21, 1953. The present curriculum makes it possible for students enrolled for a full program of eleven courses to fulfill requirements for a Certificate in Industrial Safety, or a Certificate in Traffic Safety. Students may also elect courses in fields of special interest.

Courses to be offered in the fall term are: Accident Prevention—Its Background, Objectives, and Relationships; The Philosophy and Basic Principles of Accident Prevention; Industrial Hazards—Mechanical and Personal Control Methods; Fire Prevention and Protection Inspection; Organization of Fleet Safety Programs; Vision in Industrial Safety and Motor Vehicle Operations; Effective Speaking in Accident Prevention; Principles of Safety Inspection.

In addition the following special courses designed for particular groups will be offered: Marine Accident Prevention, Hotel Accident Prevention, Accident Prevention for Small Firms, Hospital Accident Prevention.

Information about these and other courses and activities may be secured by writing the Center for Safety Education, New York University, Washington Square, New York 3, New York.

HILLYARD...
Floor Treatments Provide
How industry rolls is dependent to a large extent upon the condition of its floors—and in view of the tremendous beating they take, deserve the very best in maintenance. For nearly half a century, Hillyard has specialized in industrial products to keep floors smooth, dirt-free and slip-resistant — to permit fast, safe, trouble-free operation of material flow, foot traffic and other plant activities from work bench to loading dock. Let Hillyard serve you.
SAFE, LASTING HIGHWAYS FOR TRAFFIC FLOW
100 Hillyard Floor
Experts (Maintaineers)
help and advice without
today for a free floor survey.
. . . on Your Staff — Not Your Payroll
FLOOR HILLYARD TREATMENTS
St. Joseph, Missouri
(For further details, use Key # H-18 on free Inquiry Card on page 73)

Bugs Got You Down?

PESTIFEROUS insects are the most common summertime aggravations. The Yale & Towne Manufacturing Company has come up with a list of positive suggestions designed to help combat these bothersome warm-weather annoyances.

Figures made public by The National Pest Control Association indicate that a single pair of flies, beginning in April, could produce 191 septillion offspring by August, if all lived. That number written out looks like this: 191,000,000,000,000,000,000,000,000,000.

Many dangerous diseases are transmitted by flies and mosquitoes but modern medicine has made this factor less serious than it once was. Both insects nevertheless form the number one source of summertime aggravation in many areas.

Here are some helpful hints to help combat mosquitoes and flies:

IN FIGHTING MOSQUITOES

1. Use sprays of 5 percent DDT on porches and on both sides of screen doors.
2. Use repellents on skin and clothing.
3. Screen all windows and doors with 16-mesh-to-the-inch screening materials, and equip each screen door with a pneumatic doorcloser and push-pull catch to insure quiet, certain closing.
4. Keep water from accumulating in tin cans, eaves troughs, and street gutters.
5. Screen open cisterns, cover cesspools, septic tanks, and rain barrels.
6. Empty bird baths or chicken watering pans at least once a week. Treat standing water in pools or ponds with larvicides.
7. Stock ornamental pools with gold fish or top minnows.

IN FIGHTING FLIES

1. Use space-sprays or aerosol bombs indoors.
2. Use residual sprays that will stick on screens, porches, and garbage cans.
3. Use fly traps, fly papers, fly poisons, fly electrocution devices, and fly swatters.
4. Play safe with 16-mesh-to-the-inch screens on doors and windows to keep out all insects.
5. Hang screen doors to open outward, and equip each with a pneumatic doorcloser and a push-pull catch to insure quiet, certain closings.
6. Spread manure thinly on fields and lawns to prevent flies breeding. Store manure in fly-tight boxes or pits, and treat it with borax, calcium cyanide, or super-phosphate.

You can make your summer months more pleasant by excluding insect pests if you observe the security measures outlined.

Detailed information on specific chemicals to use in the battle against flies and mosquitoes may be obtained by writing the Bureau of Entomology and Plant Quarantine, Department of Agriculture, Washington, D. C.

Pictures by courtesy of Yale & Towne Mfg. Co.

Stock ornamental pools with Goldfish or top minnows.

Many weapons can be used to fight flies and mosquitoes

TRANSPORTATION SAFETY

'52 Highway Accidents Cost $3½ Billion

HIGHWAY accidents in the United States last year caused an economic loss of $3,500,000,000, William H. Brewster, manager of the automobile division of the National Bureau of Casualty Underwriters, reports.

Asserting that the owner of a fleet of commercial vehicles is "in the unique position of 'calling his own tune' when it comes to the determination of automobile liablity rates," Mr. Brewster shows how the experience rating plans of insurance companies apply to the owners of 5 or more automobiles.

"From the viewpoint of the owner of a fleet of commercial vehicles," he says, "one of the most important effects of a sound safety program is the much-to-be-desired reduction in the cost of automobile liability insurance."

Mr. Brewster uses two cases from the files of the insurance companies' rating organization to illustrate how fleet owners win premium reductions through good driving records and pay penalty rates for repeated accidents. He uses the example of a wholesale grocer with 10 trucks operating in and about greater New York. By safe operation and holding accidents to a minimum, this insured earned the following credit modifications, meaning percentage reductions from the manual rates:

Year	Bodily Injury		Property Damage	
1948	Credit	16%	Credit	5%
1949	"	20	"	8
1950	"	22	"	16
1951	"	40	"	40
1952	"	35	"	35

Another example, a bus line in upstate New York, proves what happens when the accident record is poor. This risk established the following record of debt modifications calling for premium charges substantially higher than normal:

Year	Bodily Injury		Property Damage	
1948	Debit	18%	Debit	30%
1949	"	41	"	24
1950	"	108	"	108
1951	"	103	"	103
1952	"	87	"	87

By far the greatest number of commerical car fleet risks, which qualify for experience rating, earn credits thus proving that most of them are enjoying the results of the accident prevention activities sponsored by the insurance companies and safety councils. However, much work remains to be done in order that all commerical automobile fleet owners gain a full realization of the many adverse effects of accidents involving their equipment.

Mr. Brewster points out that there are many losses to companies in addition to those covered by insurance. These include time lost by employees other than those involved in the accidents, impairment of service, time lost through court appearances in litigation, dissatisfaction of customers or clients over delays resulting from accidents, and inability to get experienced replacements for injured drivers.

He concludes that the economic loss from automobile accidents last year of $3,500,000,000 and the "nearly 40,000" highway deaths and "maiming of millions" should give the fleet operator "added incentive beyond the question of insurance cost to increase his efforts to eliminate accidents."

NYU Offers Course In Traffic Engineering

THE Graduate Division of New York University's College of Engineering will offer a course in traffic engineering during the first semester of the 1953–54 academic year. Beginning in late September, classes will be held one evening a week for 15 weeks at NYU's University Heights campus in the Bronx.

Traffic engineering is one of an integrated series of courses in the University's new graduate program in transportation engineering. The courses are primarily intended for persons holding undergraduate degrees in civil engineering. Each may be taken as part of a program leading to an advanced degree, or as a single course by a qualified special student.

The new course will cover traffic engineering organizations and functions; traffic survey techniques; and the presentation and analysis of survey data, with particular emphasis on traffic studies in urban areas. Also treated will be the relationship of traffic studies to capacity and design, vehicle characteristics, driver behavior and patterns and characteristics of the traffic stream. Attention will be given to traffic control devices and the treatment of intersections, including signing, signalization, channelization, curb- and off-street parking regulations, one-way streets, and speed zones. Parking and accident studies will be discussed.

Additional information may be obtained from the assistant dean of the Graduate Division, New York University College of Engineering, New York 53, N. Y.

"TOOL KIT" FOR TRUCK FIRES

TO MAKE sure that its operators have fire safety equipment readily accessible on every haul, and to make sure the equipment is always in top-notch shape, Associated Transport, Inc., New York, N. Y., has initiated a safety practice utilizing a portable safety kit. The kit itself is airtight and made of steel, and is designed to store various safety devices neatly and securely, as well as to protect them from exposure to weather.

Each of the company's 40 terminals and 22 sub-terminals throughout the Eastern states carries a supply of these kits, and drivers are required to "check-out" a unit as a first step in their procedure for starting a new run, then to "check-in" the unit at the destination terminal as a first step in completion of the run.

This system makes it certain that no truck proceeds without adequate fire protection and, by attaching responsibility for the unit to the individual driver, it lessens the chance of the kit being misplaced en route. By calling for "check-in" of the equipment at the end of a run, the system also eliminates the pilferage of such equipment commonly experienced when trucks are left unattended at terminals during layovers. Also, the "check-in" enables terminal men to inspect all safety devices and make sure the kit is shipshape for subsequent use.

The main item of safety equipment carried in this kit is a 1½ quart pressurized fire extinguisher especially developed to meet new I.C.C. capacity requirements on extinguishers for the trucking industry.* This extinguisher is also designed with a one-hand squeeze grip operating lever to permit an operator to bring the unit into play with one hand; his other hand is entirely free for other emergency action. The extinguisher discharges its extinguishant (carbon tetrachloride) in a fire-smothering spray. Fuses and red flags with standards are also carried in this kit, as are 10 items of first aid equipment, including bandages and dressings.

The kit measures 2 feet in length by 6 inches wide by 6 inches deep, and is equipped with a carrying handle. A driver may easily slip the kit into his cab, and have it within reach for any emergency that may arise.

This new safety kit and safety procedure are part of the company's continuing accelerated safety program launched in 1951 to step up motor efficiency through better safety practices.

Pictures by courtesy of Stop-Fire, Inc.

* The name of the manufacturer of this fire extinguisher may be obtained from the editor.

"Blueprint" Booklet For Local Traffic Problems

ASSERTING that a tremendous power for traffic accident prevention lies dormant in every community, the Association of Casualty and Surety Companies has issued a "blueprint" designed to assist cities and towns to organize local forces more effectively in a national campaign for greater traffic safety.

Traffic police heads, government officials and public support groups at local and state levels are among thousands of key people dealing with the increasingly serious highway accident situation to whom the Association has sent its safety guide.

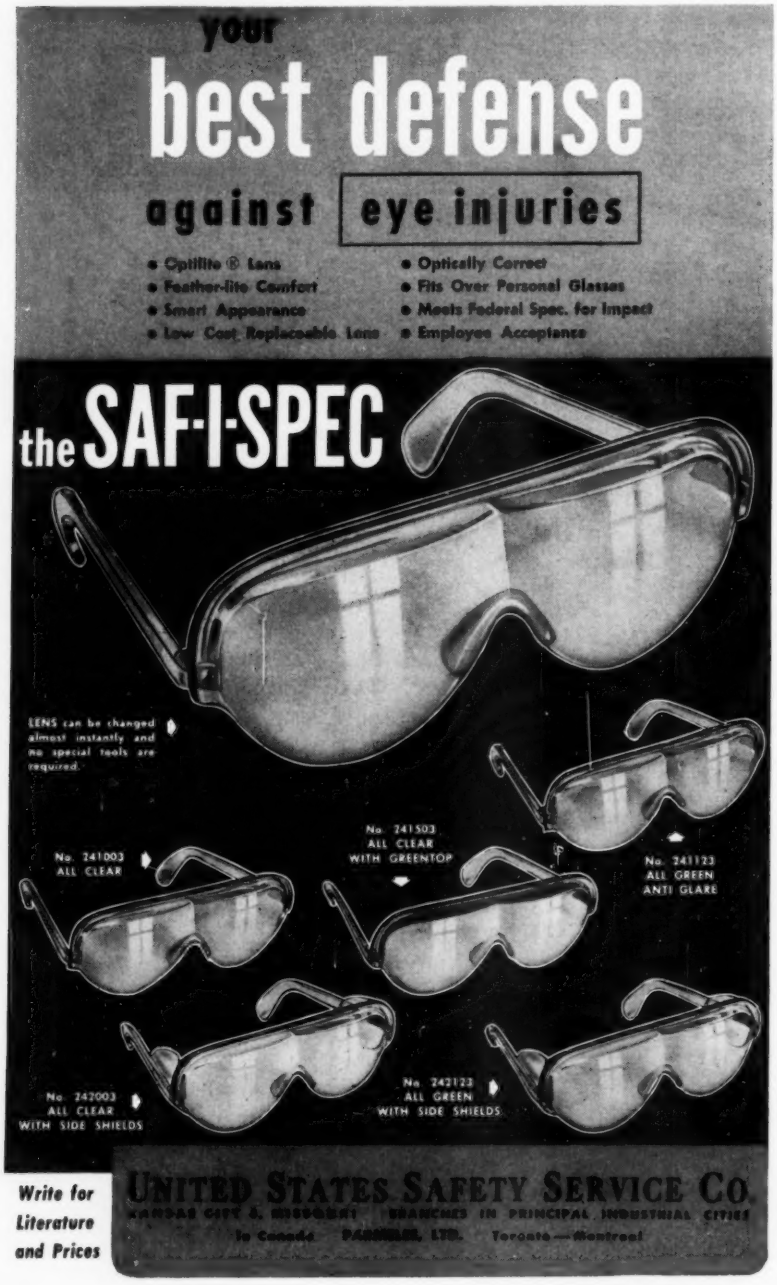
The new 24-page "blueprint" booklet is titled "How to Attack the Traffic Accident Problem in Your Community." The booklet outlines various kinds of assistance available from national organizations which can help a community to organize its forces to combat increasing accidents.

A foreword to the booklet declares, "WHO should attack the traffic accident problem is the first consideration. WHAT needs to be done—the fundamental determination of local difficulties—is second. HOW to do it is the third—and that is the area in which this 'blueprint' focuses its attention."

The first two steps outlined are 1) get the facts and 2) determine local priorities. "Without accurate knowledge of the traffic hazards of a community," the booklet says, "a traffic safety program becomes aimless wandering. Regardless of the method employed in your community to obtain authoritative information, you *must* have the facts upon which you will determine what needs to be done." Regarding the second step, the booklet advises a competent survey which will disclose the strength and weaknesses of a local traffic safety program, then an attack concentrating on the weakest spots because "prompt results, while not the most important consideration, do stimulate public opinion and build a strong foundation for the more demanding tasks."

Stating that the third step is to inform the public of the aims of a local program, the blueprint adds: "Organizations and individuals are not working actively for safe streets and highways because they don't know what to do. In the prompt and complete announcement of your plans you immediately set the stage for coordinated public support projects—the natural inclination will be to follow the program subjects established by local leaders. In the following sections, each of the categories listed is briefed with extensive references to organizations recognized as experts in these fields. We urge you to utilize the knowledge and experience of these organizations. Here is the heart of your attack on the traffic safety problems of your community."

Other phases involved in the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inauguration of a local traffic safety program described in the booklet include: Accident records and statistics, traffic engineering, highway engineering, school traffic safety education, traffic safety education for adults, traffic law enforcement by police and the courts, traffic laws and ordinances, pedestrian safety, organization for public support and programs of public information.

The booklet is obtainable from the Association of Casualty and Surety Companies, 60 John Street, New York 38, New York.

Role Of The Courts In Traffic Safety

A NEW JERSEY magistrate offers suggestions on how to improve courts as a way of reducing "the frightful toll of deaths and injuries in motor traffic today."

Magistrate Henry W. Clement, of Plainfield, who has handled traffic cases for the last 12 years, cites figures to show how enforcement in traffic cases increased since New Jersey revised its judicial system in 1948. He feels that courts can correct driver faults by:

1. Creation of a violator's school, which offenders may be required to attend for correctional or other training for driving skills.

2. Dispassionate, well conceived and well planned individual or group discussion by the magistrate with the defendants who appear in court.

3. Maintenance of violators' record, statewide, so that a magistrate can secure these records prior to the appearance and sentencing of violators.

4. Making available psycho-physical testing equipment to measure reaction time, visual acuity, depth perception and other essential driving skills in motorist defendants who give evidence of such deficiencies.

5. Applying in such a court system the three "E's" of penalization: To make the penalty exemplary, so that in publication of penalties the policy will reach out into the community; to make it effective, so that it is a deterrent and so that reasonable uniformity is achieved; and to make it educational, driving home some lesson to the errant motorist.

Mr. Clement said that unification had set up throughout New Jersey municipal courts which eliminated 10 or more diverse types of courts which formerly had separate presiding judges and jurisdictions. Under direct control of the State Supreme Court, the municipal courts are governed by a uniform set of rules, which can be altered as experience dictates at the annual conference of all magistrates. He said standard and uniform traffic summonses and complaints, with a "no fix" traffic system had brought about a "healthy respect in the driver's attitude towards traffic law enforcement."

3
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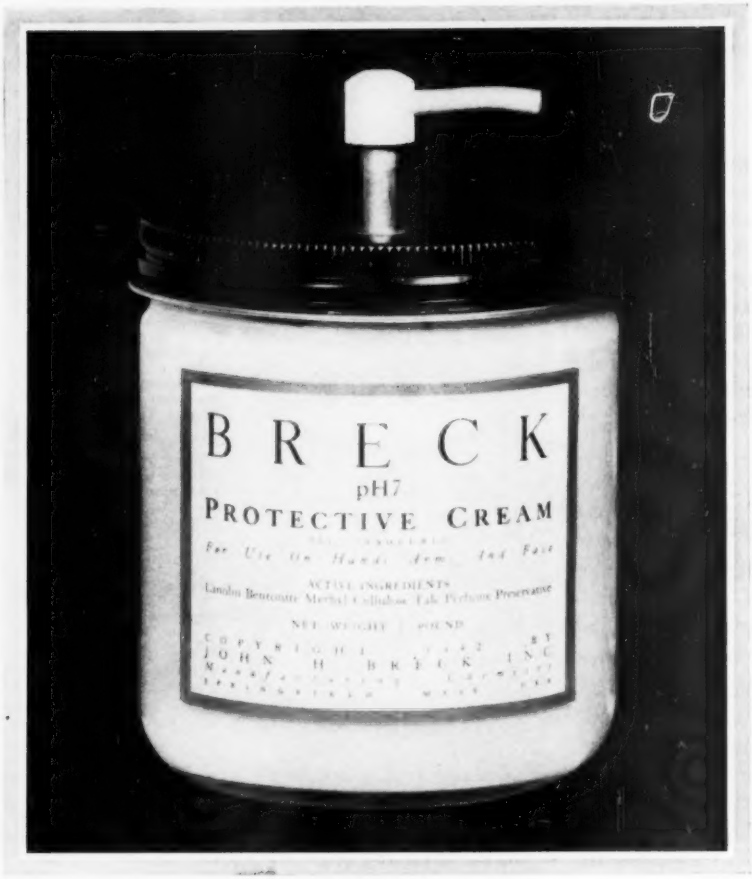

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Industrial Hygiene

Associate Editor
Jacob A. Goldberg, A.M., Ph.D.

Cardiacs Can Work

HEART disease is not necessarily a barrier to all employment, according to an article in a recent issue of the "*Industrial Bulletin*," monthly newsmagazine of the New York State Labor Department.

Entitled "Cardiacs Can Work," the article reveals the increasingly successful operation of a special program by the State Employment Service through which persons with heart trouble are helped to find jobs in competitive industry.

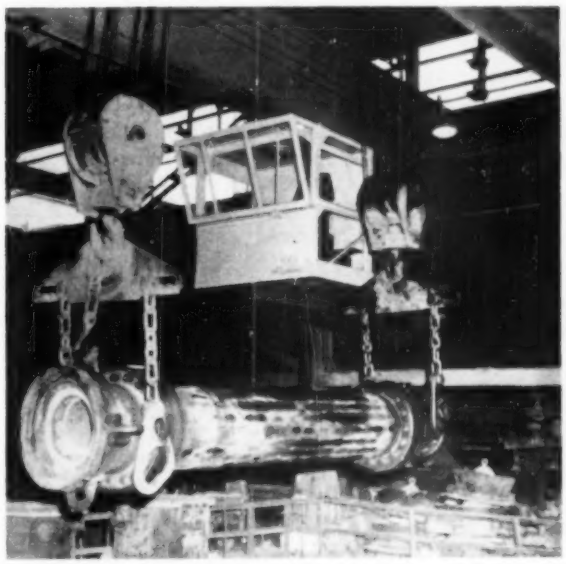
During a special campaign week, the Employment Service interviewed over 400 job applicants with heart trouble and was able to place one out of every five. None of the placements were made without the regular procedure of first obtaining complete medical information from the worker's doctor as to what physical activity could be safely undertaken.

Full Examinations

The job applicant receives a complete physical examination at a work classification unit in Bellevue Hospital. These findings are integrated with those stemming from a detailed interview by a vocational counselor to provide a basis for determining a suitable job objective.

The selective placement section of the Employment Service takes over at this point, using the full report on the individual as a guide in finding a job for the individual.

Since the initial program was developed in New York City, the Employment Service has extended it to its other offices throughout New York state.



Fume-Free Crane Cab

TAR fumes arising from dipping tanks in a foundry create an annoying situation for the hot-metal crane operator. The fumes contain acridine, which causes headache, eye soreness and inflammation of the mucous membranes. Also of considerable nuisance is sand, dust and steam in the atmosphere as well as the excessively high temperature present at the crane level.

To protect the operator against these perception dulling hazards the crane cab above was enclosed and fitted with a sloping front window which permits the operator to lean forward and get the best possible working view of the floor below. An air-conditioning unit, mounted on the bridge above, furnishes filtered,

odor-free and cooled air to ventilate the cab. Working in a comfortable atmosphere of 80 to 85 degrees F. in summer and 68 to 72 F. in winter, the operator is no longer affected by distracting conditions and remains alert to the dangers involved in handling molten metal.

Picture by courtesy of Dravo Corp.

Air Pollution Control Eases Air Conditioning

THE successful war on air pollution is resulting in easier air conditioning, from the architect's standpoint. Cleaner incoming air, due to improved methods of purification, means that only enough outdoor air is now needed to avoid objectionable carbon-dioxide concentration. The result will be reduced sizes of boilers, refrigerating equipment and ductwork.

This was brought out by Norman Sharpe, head of the Air Conditioning and Refrigeration Department, California State Polytechnic College, San Luis Obispo, California, at the semi-annual meeting of The American Society of Mechanical Engineers.

Suitable ways have been devised for removing nearly all objectionable pollens, smoke and atmospheric dusts with accompanying bacteria and odors. Improved dry filters, electronic precipitators, and activated carbon adsorbers play important parts in complete air purification. Using purified recirculated air rather than outdoor air for ventilation not only eliminates the non-recoverable loss of cooling the outdoor air to the room condition, but also enables the engineer to design the system for maintaining lower relative humidity in the rooms, with consequently smaller quantities of air and smaller-sized ducts to bring it in.

Studies of ventilation for inhabited rooms have disclosed that in the ordinary quiet respiration of human beings no volatile poisonous matter is in the expired air, other than carbon dioxide. The air expired from the lungs has no odor. Bad breath is caused by unclean mouth and teeth conditions. Odor, mainly body odor, has considerable effect on the comfort of people in the room. The air in an occupied room is contaminated by many sources besides the expired air of occupants. These contaminants are in the form of minute particles of dust. Tests in a hospital room showed that in this dust (which could be removed by a filter) there were micro-organisms, including some of the bacteria which produce inflammation.

Oxygen Level

The concentration of carbon dioxide and diminution of oxygen, found in crowded, poorly ventilated churches, schools, theatres and barracks, is not great enough to account for the discomfort produced in many persons. Neither is such discomfort caused by bacteria nor, usually, dusts of any kind. The main causes are excessive temperature, humidity and unpleasant odors. In most buildings the normal infiltration leakage of air provides enough oxygen to keep the carbon dioxide concentration at a sufficiently low level. In tightly insulated buildings 2 cubic feet per minute of outside air per person, depending on their activity, is sufficient.

Tobacco smoke presents a greater problem than body odor. About 25 cubic feet of outdoor air per minute per person is required where smoking is allowed, while 12 may be enough to control body odor in ventilation.

The effect of air pollution on the general health of the people in industrial districts is largely a matter of speculation. Pollutants vary from time to time in a given community. Normally the atmosphere does not become sufficiently polluted to cause distress; but in foggy weather, during periods of low air velocity, or during periods of temperature inversion in the atmosphere, the accumulation may become so great as to cause irritation of the eyes or respiratory passages and even death to those afflicted with respiratory or heart ailments.

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SEE WHAT'S NEW ON PAGES 69–72

FEATURE

Second of a series on Skin Protection. The third article in the September issue.

STOP DERMATITIS BEFORE IT STARTS!

THE general term dermatitis means simply "inflammation of the skin." Industrial dermatitis, inflammation caused by materials used in industry, is the most common of all industrial diseases. The ratio of dermatitis to other industrial diseases is particularly high since the greatest number of cases do not last long enough (usually one week) to be reported to compensation boards, which are the source of industrial disease statistics.

As early as the sixteenth century, skin changes caused by "industrial" employment were described. Changes caused by salt compounds and ulcers among metal workers were noted. In the eighteenth century, Ramazinni published a detailed description of occupational skin diseases among bakers, millers, washwomen, salt miners, bath attendants, sievers of corn, hostlers and midwives. Since then more and more investigations have been devoted to the cause, effect and prevention of industrial dermatoses.

Dermatitis and the Skin

The strengths and weaknesses of the human skin to the eruptions and lesions of dermatitis deserve some mention. The skin is protected by various devices. The tough outer layer will withstand moderately strong acids, but not alkalis and fat solvents. Perspiration dilutes dangerous substances which dissolve in water and reduces their action on the skin. Oils and fats form a protective coating, but are dissolved by certain chemicals. The skin pigment guards against dangerous light rays. On the other hand, the pores of the skin furnish a convenient passageway for irritants of all kinds; and, excessive sweating may soften the skin and make this passage easier while dissolving some irritants which otherwise could not pass through the pores. Minute punctures of the skin, not large enough to bleed and be noticeable, are all too common entrances for dirt and bacteria. The skin can also be broken down and weakened by constant rubbing to the point where infection takes place.

Individual skins may be stronger or weaker in their resistance to dermatitis, and certain basic skin traits affect this resistance. Skin texture, for example, predisposes persons toward certain types of allergy and away from others. Persons with oily skins are less apt to develop dermatitis from soaps and other solvents than people with thin, dry skins. On the other hand, they are much more likely to pick up acne-like infections from contact with greases and oils.

Blond people are usually more susceptible to skin irritation than brunettes, and light skins are more easily injured by light rays. Hairy skins are more likely to develop dermatoses from infections centering around hair follicles. Different skin areas of the body are more open to dermatitis than others. The soles and palms are less often affected than the underside of the forearms, between the fingers, and around the nails. However, exposure has a great deal to do with this. It is exceptional to find industrial dermatitis on the back of the body below the neck; although oil may saturate the trousers and cause irritation of the thighs; dust may enter the waist and cause dermatitis of the abdomen; friction of soiled pants legs, sleeve openings, or collars may bring on dermatitis of the neck, wrists and ankles.

As previously mentioned, perspiration may be an injurious agent as well as a protective one. Persons who perspire excessively may readily induce poisons into their skin. Of course, persons with existing skin diseases, such as "athlete's foot" or "acne" are more susceptible to other forms of dermatitis. Younger workers are more often affected by industrial dermatitis because the skin has not had time to accustom itself to the industrial material. On the other hand, chronic dermatitis is more often found in older workers. Due to its greater dryness, the skin of women is more sensitive to ex-

ternal irritants than that of men. However, fewer claims for female compensation may be attributed to greater cleanliness, greater concern over small irritations and the smaller number of women in occupations hazardous to the skin.

The season of the year is a factor in industrial dermatitis. In the summer greater portions of the body are exposed to infection, in the winter showering and removal of the irritating substance is less frequent. Some people are allergic to certain substances and any contact causes dermatitis. This type of sensitivity may be inborn, or it may develop after one or more previous contacts with the sensitizing agent. The diet of the worker may also be a predisposing factor in dermatitis. The acidity of perspiration appears to have an effect on susceptibility to certain irritants but there is not sufficient evidence to prove it. However, dietary deficiencies may influence the vitamin content, and lower the skin's resistance to infection.

The most important factor which directly influences the individual's susceptibility to dermatitis is personal cleanliness. If the worker does not keep himself clean, prolonged contact with irritants may result in dermatitis. Certain solvents such as gasoline, naphtha, carbon tetrachloride, and others used to clean hands, remove the protective oils and fats from the skin, making it more sensitive to irritants. In many cases of industrial dermatitis infection develops from dirt.

Industrial Dermatitis Agents

Repeated rubbing and friction of the skin may cause dermatitis even though there is no other infection present; irritation by sand, coal dust, particles of metal and other materials may all cause dermatitis. Cuts and abrasions become secondary sites of dermatitis present on the skin by allowing the dermatitis to enter the skin through the lesions.

Bacteria, fungi and parasites are capable of producing dermatitis on the intact skin, and they may produce a secondary infection in cuts or scratches. Physical agents, such as heat, cold, radiation from radioactive materials, electricity, and x-rays are also causes of dermatitis. Heat may cause excessive perspiration in areas such as the groin, armpits and insides of the elbows and knees, resulting in rashes and inflammation; the sun may develop a freckle-like condition in merchant seamen and farmers, excessive pigmentation, and cancers of the skin; electricity and radioactive materials can cause dermatoses from burns.

Chemical agents may be responsible for primary irritation by direct action on the skin or they may act as sensitizing agents. Many such irritants produce characteristic types of dermatitis on certain parts of the body. For instance, acne-like lesions and inflammation around the hairs on the arms and legs are characteristic of coal tar, petroleum oils and other cutting oil dermatitis. Small straw colored elevations on the face, neck and arms are indicative of chloro-naphthalene, diphenyls, phenols, and benzol poisoning. Warty growths and skin cancers are found among petroleum workers, paraffin pressmen, and persons in contact with heavy coal tar distillate residues, such as wood preserving oils and pitch. Handlers of hydroscopic chemicals such as sugar, salt and lime may develop dry, scaly-fissured palms.

Dermatitis from allergies to various substances produces swellings and blisters, but gives no definite clue to the actual irritant. Highly concentrated irritants, if permitted to remain on the skin only a short time, produce similar effects. If they are on the skin very long they may produce ulcers. Inflammation around the nails and erosion and loosening of the nails are characteristic lesions among fruit and vegetable canners.

Prevention and Control

Prevention and control of industrial dermatitis is the responsibility of both employer and employee. Effective measures are impossible without the wholehearted cooperation of both. The employer should know thoroughly what the dermatitis hazards in his plant are and should see to it that employees get full and accurate instructions on handling the hazardous materials or in conducting the dangerous operation.

Workers should be carefully selected for personal cleanliness and tidiness, skin characteristics, and the absence of chronic skin infections. Careful selection of employees for the job does not end management's responsibility, however. Periodic inspections should be held, any evidence of irritation should be treated immediately and the exposure of the employee to the irritant stopped immediately or greatly reduced. Management should provide the correct washing materials and facilities for all workers exposed to a dermatitis hazard. In many instances it will be possible to substitute non-irritating materials for the dangerous ones. Contact can be reduced or eliminated by introducing mechanical methods of handling and suitable ventilation of dusts and vapors. Protective clothing, such as gloves, boots, aprons or hoods should be provided where necessary. These of course should be kept clean inside since they can easily cause dermatitis themselves by rubbing. Where practical, protective creams for specific hazards are a good investment.

The employee's responsibility is simple and is chiefly his own protection. He should use all protective devices furnished, be familiar with the hazard, follow the safety instructions he has received and report immediately any irritation or any cut or abrasion that might give entry to dermatitis. Above all, he should keep himself scrupulously clean—shower, wash away all traces of dirt or contamination, pare and manicure his nails and pay particular attention to keeping body hair clean.

Dermatitis usually develops because of some protection failure. Lack of knowledge of the harmful properties of the materials used, improper job placement, lack of peri-

(Continued on page 54)

INDUSTRIAL PSYCHIATRY

By LYDIA C. GIBERSON, M.D.*

INDUSTRIAL psychiatry is really a phase of preventive medicine. It aims to forestall and prevent serious mental and emotional maladjustments among industrial employees. It is not an exact science and can never be an exact science. It might be termed an *emotional first aid station*. It is an attempt to bring the benefits of modern psychiatry and modern neurology to the broad mass of working Americans now excluded from these benefits. It justifies its bid for a place in American industry not only by the humane factors involved but also by the cold, hard gain in efficiency, morale and profits. In its simplest terms, an adjusted, contented and happy employee pays dividends to a corporation and to a community.

Within the past few years, a new perspective has evolved in the field of psychiatry. That branch of preventive medicine which once was merely custodial in its function, has passed through a difficult and attenuated therapeutic stage, and is now laboring in the preventive stage. In 1920 an interesting survey of New England was made by the late Dr. Elmer E. Southard. Dr. Southard was investigating the possibilities of a psychiatric approach to industrial personnel problems. In the course of his survey, he found that 62 percent of more than 4,000 cases observed reached the discharge status through traits of *social incompetence* rather than *occupational incompetence*.

Industrial psychiatry, therefore, must be an emotional first aid station. As such its functions are those of an industrial physician with special neurological and psychological training—a strong sprinkling of common sense—a practical approach to every problem, and, above all, a very definite understanding of management.

As an integral part of a medical set-up, industrial psychiatry demands first, full medical understanding plus a "zone of neutrality" in which the employees' normal woes may be sorted out from real afflictions mental or physical. It is amazing how much sand the imaginary woes can throw into the gears of industry. Functional stomach symptoms can cause just as much organizational damage as early carcinoma.

One cardinal principle of industrial psychiatry fol-

* Dr. Giberson is personnel adviser to employees for a leading insurance company.

lows American law. The employee entering the office is perfectly normal until conclusively proven otherwise. The psychiatrist, working on the premise that an employee must be emotionally upset to be interviewed, will have no place in industry. Psychiatry in its preventive phases does and will have such a place.

Psychiatry In Industry

How is the application of psychiatric principles to be carried out in industry?

The industrial physician is the logical liaison for the administering of a psychiatric program for the simple reason that industrial psychiatry is at best a supplemental service to general industrial health. The industrial physician first has the basic medical training which is implicit in the actual meaning of psychiatry as a practice. Second, through long years of faithful ministering to the physical ills of the worker and advice concerning his outside medical service, he has already built up a backlog of confidence through his intimate association with employees and their general health problems. Again, the industrial physician enjoys in the main, the complete confidence of management, his em ployer, for whom he is doing a day to day specific job. Thus, he is in a position, with the exercise of ordinary tact, to place the psychiatric aspect of the job on a plane of reasonable insight.

It is entirely rational to suppose, for instance, that the worker who has come for emergency treatment after repeated minor accidents will respond to the doctor who has treated him and is seeking the psychiatric basis for this accident record. It is in this type of rapport that any application of mass psychiatry must find its foothold, for, in the final analysis, all psychiatry is founded on confidence in the practitioner.

Most American workers have made their adjustments to industrial living, and if their existence is not upset too radically, they will continue to function smoothly and consistently with only normal lapses for illness and age crises. In any large organization, however, there will be at any one time a fairly constant 20 to 25 percent of the workers who for chronic or temporary causes are unable to bear efficiently the stresses of industrial work.

Types of Emotionally Unstable Workers

Peacetime experience has shown that the psychiatric bulk in industry subdivides into 4 basic types. First the neurological or organic conditions such as brain tumor, central nervous system, lues, post-epidemic encephalitis, cerebral accidents, epilepsy, etc. The number of these cases is fairly small. The second group includes those suffering from psychoses, commonly called mental breakdown. Most of these are too ill to be at work and, therefore, except for the emergency treatment at the time of the break give little trouble. The third group are the psychoneuroses, commonly called nervous breakdown, and the fourth are the maladjusted. It is in the third and fourth groups that we have most of the employee problems. Absenteeism and lessened efficiency which results in lowered plant production can be largely traced to these groups.

Remember, that employees at all levels may belong to these groups. When dealing with the worker with such a problem, everyone must work together as a unit or a team. Most of these behavior problems cannot be said to belong to personnel, to medical, or to management exclusively. One cannot tell where the responsibilities of one department ends and the other begins. From 75 to 80 percent of all employees do their work well and without much upset. The hours that are spent by a corporation in the handling of employee problems could, I believe, be cut down greatly by close cooperation between personnel, medical and management. For the good of the individual, for the good of the company, and for the good of the industrial physician, the three must be in perfect harmony.

Bring mental health to the employee, place him where his abilities fit, give him some concrete proof that he is liked and his ability valued and we, as a society, shall have a measure of control over the dangers of industrial life which now seems unbelievably improbable.

From an address delivered before the Academy of Medicine.

Air-Conditioning Refrigeration Show

DEMONSTRATIONS of the growing uses of refrigeration and air conditioning as a means of increasing industrial production, reducing costs and improving quality will be the highlight of the eighth Refrigeration & Air Conditioning Exposition, according to W. A. Siegfried, president, Superior Valve & Fittings Co., Pittsburgh, who is general chairman of the exposition.

The show, held every 2 years, will take place Nov. 9–12 at the Public Auditorium, Cleveland.

Conference on Outdoor Noise

OUTDOOR NOISE will be the topic for the Fourth National Noise Abatement Symposium to be held October 23 and 24, in Chicago.

Purpose of the symposium will be to disseminate information on outdoor noise. Papers on traffic, vehicle, and other city noises and on urban and industrial planning for less noise are being considered for presentation.

Co-sponsors of the symposium are: National Noise Abatement Council, Acoustical Materials Association, Acoustical Society of America, American Industrial Hygiene Association, American Society of Safety Engineers, American Institute of Architects, Council on Industrial Health of the American Medical Association, American Society of Planning Officials, and Armour Research Foundation of Illinois Institute of Technology.

The Industrial Nurse

Editor
Rosamond J. Webster
R.N., A.M., Ph.D.

The Major Enemy

IN THESE troublesome times, it sometimes becomes difficult to determine who or what is the major enemy of mankind. Opinions may differ, but to those who, like industrial nurses, are concerned with the promotion of health and the prevention of disease, the major enemy of mankind continues to be illness.

Dr. Brock Chisholm, the distinguished physician who headed the World Health Organization, put the matter as follows: "The whole concept of WHO, all the principles included in its constitution, are based on this simple truth; in our shrunken world, health, like peace and security, is indivisible, and mankind's fight against illness, its major enemy, can be won only through the concentrated effort of us all." A reading of the publications and periodicals reports of WHO bears out Dr. Chisholm's statement. In many parts of the world a large segment of the population suffers from many diseases. Some of these are being conquered through mass attacks with DDT, penicillin, and other drugs and antibiotics. In many places the digging of wells and the provision for the first time perhaps in centuries, of a wholesome water supply, is bringing about marked changes in the health of local populations. The fairly recent arrival of several hundred thousand former residents of tropical countries on the Atlantic Seaboard, has impressed many communities with the interrelationship of illness in one place, and the effects on other population wants, even in our own country. A strong country can only be built over a period of decades and even centuries in which physical and mental illness are controlled, prevented and even eliminated. Each ailing individual may be a source of illness for many others. Education, prevention, treatment are the areas in which industrial nurses have to function.

Summer Heat

EXCESSIVE heat is always a hazard to workers in certain industries. It was long ago found that those employed in industries which exposed the workers to high temperatures throughout the year—both summer and winter—reported an abnormally high incidence of severe respiratory diseases. In the summer especially, workers may be exposed to excessive heat at work, and to sunburn and heat prostration while not on the job. The Monday morning sunburn victim, following a week-end of injurious overexposure to the sun's rays, may come post-haste to the plant nurse for help.

While the chances are that most cases will get well within a week, very severe sunburn with heat prostration and shock has at times been fatal. However, it is fair to presume that those in such a state will hardly be in a condition to report for work. Those who appear to be ill, should be referred to their physicians. In heat prostration, which may occur in the work place or on the job out of doors, the victim may appear listless, apprehensive, semi-comatose or in severe cases, unconscious. Heat prostration responds rapidly to treatment. Place the ailing person in a reclining position in a cool environment when possible. If possible, the plant or attending physician should be called to look after the victim. It is now a fairly regular practice to provide salt tablets in work places in which high temperatures are common. Not all the fault, however, can be laid on the place of employment. Excesses in food and drink intake during a hot spell may add to the risk of heat prostration. A poster of hot weather hints prepared by the medical department may be of help in preventing some cases, and in educating those who need such advice most. Advice to all who come to the medical department should also be tried.

Respiratory Cancer

THERE has been much written within the past few years on the increase in respiratory cancer. In the country's urban populations, which has readiest access to the best diagnostic facilities, cancer now leads all other diseases of the respiratory tract as a cause of death among white males.

According to the figures of a large insurance company, writing millions of policies among industrial workers, the death rate from respiratory cancer (1950–1951) among white males at ages 1 to 74 years was 25.7 per 100 thousand compared with 21.9 for respiratory tuber-

MARTINDALE

PROTECTIVE MASKS

PLACE HEAD-BAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
PRESS NOSE TABS IN CLOSE AGAINST FACE TO HOLD PAD AGAINST THE NOSTRILS
PRESS EDGES OF FACE PLATE DOWN TO FIT FACE SNUGLY

Weigh less than ½ ounce. Afford excellent protection against non-toxic dusts, except free silica. Replaceable cotton pads are inexpensive and sanitary.

Martindale Protective Masks ..... $.30 ea.
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(For further details, use Key # H-23 on free Inquiry Card on page 73)

SAFETY EQUIPMENT FOR ALL INDUSTRIES

Window Platform

Protection for PAINTERS WINDOW WASHERS MAINTENANCE MEN

Quick, easy application provides convenience — time saving — safety. Platform rests on outside sill and is held firmly in position by adjustable, telescopic steel tube on the inside. Each platform tested for 800 pounds. Collapses compactly. Approved by the Pennsylvania Department of Labor and Industry.

Write for Bulletin No. 47

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(For further details, use Key # H-24 on free Inquiry Card on page 73)

culosis and 14.6 for pneumonia. Among older men, at ages 45 to 74, the differences are even more striking, the rate being 109.0 as against 72.1 for respiratory tuberculosis and 51.0 for pneumonia. Even among white women at these older ages, the death rate from respiratory cancer is higher than that from respiratory tuberculosis, the figures being 13.1 and 11.3 per 100 thousand. In the general population of the United States, too, white males in the aggregate now experience a higher death rate from respiratory cancer than from pulmonary tuberculosis. The excess was small in 1950, when the ranking of the 2 diseases was reversed, but it has since increased materially as a result of the upward trend in the mortality from the malignancies and the continued rapid decline in the toll from tuberculosis. The excess in the recorded mortality from respiratory cancer is greatest in those states which have the most abundant medical facilities; or, as in the prairie regions, in which the death rate from tuberculosis is well below the average for the country as a whole.

In the present stage of knowledge it is difficult to account for the recorded increase in the mortality from respiratory cancer, or even to determine how much of the reported rise is real. Improved techniques in diagnosis have resulted in many cases being discovered and reported, which, in the past, would have been overlooked. The X-ray and other examinations in industry are serving effectively to discover cases, particularly among those in higher age groups.

The Problem Drinker

WHAT can be done with the problem drinker, especially when he is not an experienced and valued worker? Should he be fined the next time he reports for work under the influence of alcohol? Should he be laid off, or summarily dismissed when he is known to be an alcoholic and his absentee record interferes with production? What part can the medical department play in the rehabilitation of such a worker? These are but a few of the key questions faced by employers, personnel directors and plant physicians.

At a conference held in New York City on problem drinking and industry, it was pointed out that alcoholics do not voluntarily seek assistance until drinking has resulted in severe physical, social, personal or family losses. In one large industry employing a wide range of workers, it has been found that the alcoholics will report to the medical department because of the known effort of the professional personnel to help the problem drinker. Because many workers of this public utility company are engaged in hazardous occupations, it is essential that alcoholism be reduced to as low a percentage as possible. This particular company follows the procedure of placing on probation those who are reported by their superiors as under the influence of

alcohol and therefore unable and unfit to work. The understanding is that a recurrence of the abnormal drinking behavior may result in loss of the job. Ordinarily the threat of loss of job does not prevent a problem drinker from alcoholic indulgence, or produce a strong desire to get help for his difficulty.

The procedure is to refer such workers to a clinic specializing in the treatment of alcoholics, and staffed by internists, psychiatrists, and a psychologist. Various laboratory tests and examinations are made. With this concerted effort, it has been possible to bring alcoholism under control in about 80 percent of the cases. The long term results are not as yet available. Referring known alcoholics to special clinics, when available, is a service that industrial nurses can render.

Pills—Or Not

IT IS a fairly common experience to have workers come to the medical department and ask for a particular type of pill—especially when the complaint is centered in the word headache. Too often such self-diagnosis is accepted and the pills provided. Fortunately, in many instances no damage is done, the headache passes by, and the incident is forgotten by those concerned, but what about those who keep coming back for more and more pills, and asking for other medication which will "drive away the headache"?

Most industrial nurses are fully aware of the fact that they should not make diagnosis and should neither prescribe, or dispense drugs except on orders from the medical director or attendant. Even so, some, out of a sense of presumed kindness, or thoughtlessness, or because an impatient executive asks for a headache or similar remedy, go ahead and pass out the pills. Emphasis has recently been put on the fact that a number of so-called headaches are being recognized as due to brain tumors. With the increasing average age of our population, such growths, whether in the brain or other parts of the body, have come to assume a place of importance in the incidence of various physical complaints. Headache is one of the most common of all symptoms and often is present in connection with a variety of symptoms. Its management is frequently difficult as far as diagnosis and therapy are concerned. Causes may be intercranial pressure due to brain tumor, tuberculosis, vascular disturbances, visual field changes, toxic states due to infections, alcoholism, uremia, various poisonings, hypertension, middle ear lesions, sinusitis, lesions of the oral cavity, post-traumatic complaints, psychological disorders, and others. It should be quite evident that a headache may be due to more than a reaction to late hours, lack of adequate sleep, dietary indiscretions and alcoholic consumption. The pills may help sometimes, but they may be covering up a serious condition temporarily.

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And Ended Slipping Accidents and High Insurance Costs!

It happened at a large industrial plant, where oil and grease on a loading platform created a constant hazard. A lift truck skidded on the slippery surface, toppled from the platform's edge, and crushed the operator to death.

ELIMINATED:
Accidents like this—which cost a man his life

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Then A. W. ALGRIP Abrasive Rolled Steel Floor Plate was installed on the platform—and slipping accidents ended at once. For ALGRIP is truly non-slip—even on steep inclines! Hundreds of tiny abrasive particles in each square foot of ALGRIP converted the slippery, dangerous platform into a hard-gripping, anti-skid surface—safe for men and vehicles.

IMMEDIATE SAVINGS were obtained in three ways: (1) No more costly, morale-shattering accidents. (2) Faster handling of loads. (3) Workmen's compensation insurance premiums were substantially reduced by more than enough to pay for the ALGRIP installation.

END SLIPPING ACCIDENTS
THAT STEAL PRODUCTION AND KITE INSURANCE RATES

A. W. ALGRIP—only abrasive rolled steel floor plate in the world—pays for itself in savings from safety. Tough abrasive particles (same kind used in grinding wheels) put hundreds of tiny safety-brakes in every footstep—make it virtually impossible to slip, even on steep inclines. ALGRIP doesn't wear smooth either—wear only exposes new particles. And tough rolled steel makes this floor plate stronger than other abrasive floorings. For safety at a saving, get the full ALGRIP story today. Write for our new Booklet AL-15—without obligation.

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(For further details, use Key # H-25 on free Inquiry Card on page 73)

Stop Dermatitis

(Continued from page 48)

odic inspection of workers, poor personal hygiene and failure to provide or maintain protective measures—these are the dangers to watch for.

Preventive Measures

Skin cleansers take first place among the various protective measures. The cleanser should be soluble in all kinds and temperatures of water. It should remove fats and oils without injuring the skin, or removing natural fats and oils. Harsh abrasives or irritant scrubbers are not to be used. The cleanser should also flow easily from dispensers and not deteriorate in storage or become insect infested. Antiseptic properties in the cleanser are also advisable.

Another important preventive, because of worker resistance to protective clothing that hampers work or is uncomfortable, is the use of barrier creams. In order to be effective a barrier cream should be easily applied and removed, provide adequate protection against skin irritants for at least three of four hours, be elastic enough not to interfere with movement of the part of the body it protects, be unaffected by the materials it comes in contact with, have an agreeable appearance, be economical to use and not be irritating or sensitizing to the skin.

Barrier Creams

Basically, there are 6 types of barrier creams. First, a simple vanishing cream, which is rubbed into the skin and fills the pores with soap, aids in washing off dirt and contamination. There are ointments which leave a thin film of resin or wax on the skin to prevent contact with irritants. The films are either water-soluble or water-insoluble and may be in the form of ointments, emulsions or solutions. Water-soluble creams protect against such solvents as petroleum distillates, chlorinated hydrocarbons and against water-insoluble allergens, such as T.N.T. and tetryl. The water-insoluble creams keep out water-soluble irritants like alkalis and acids.

Protective ointments containing a harmless fat, which cover the skin and fill the pores to check water soluble irritants and keep out petroleum, oils, greases, and coal-tar derivatives are still another of the various barrier cream types. They are some protection against solvents since the solvent must dissolve the fat before it can harm the skin. This class of cream is recommended for use against cutting oils, greases, creosote oil, pitch, excessive sunlight, and photosensitizing chemicals. Creams containing a non-irritating chemical intended to neutralize or detoxify the industrial irritant are useful against alkalis and acids. For example, a cream intended to neutralize an alkali would contain a weak, non-irritating acid such as boric or benzoic acid. Combined with a fat or oil base, it acts as a buffer by combining with the alkali to form a soap. For protection against acid the cream should con-

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BURNS *and* MINOR INJURIES

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STOP Eye-Strain Fatigue

Eliminate scratched, blurry, dirty goggles, glasses, face shields . . . and help your employees stop eye-strain fatigue. The K-LENS-M Liquid Method of cleaning and anti-fogging gives cleaner, clearer vision for both glass and plastic eye-wear. K-LENS-M Lens Cleaner and K-LENS-M Anti-Fogging Liquid work better and last longer . . . for lowest cost per cleaning. Complete service in a compact Dispensing Station . . . easy to install, use and service.

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THE **WILKINS** CO., INC.
CORTLAND 2, N. Y.

(For further details, use Key # H-27 on free Inquiry Card on page 73)

tain a weak alkali such as magnesium hydroxide. To protect the skin against poison ivy or blister gases the cream may contain a non-irritating oxidizing agent.

Another type of ointment forms a protective coating by causing inert dusts and powders to stick to it. The adhesive or binder may be similar to the water-soluble base used in the creams to keep out solvents. It protects against water soluble allergens and physical agents such as glass, steel slivers, and thorns or fuzz on flowers, fruits and vegetables. Still another type of cream contains physical light screens to prevent dangerous rays from injuring the skin. It is particularly valuable against heavy coal-tar preparations, oil distillation residues, and excessive sunlight.

Before application of any barrier cream the skin should be thoroughly cleaned, otherwise irritant chemicals may be sealed under the coating to defeat the purpose of the protection. Often the cream should be reapplied several times during working hours. Barrier creams should be removed by simple non-irritating cleansers in the washroom.

Advantages and Disadvantages

Barrier creams possess certain advantages over other types of protection. They keep the skin clean and reduce the risk of infection of sores or cuts. They eliminate the necessity of using rubber and leather gloves which may be cumbersome and hot. Creams are inexpensive and do not require much storage space. They provide protection for the face where other forms of protection may not be practical. Solvents and harsh abrasives, which are often used to remove tar, paint or varnish stains from the skin may themselves cause dermatitis. Barrier creams prevent these substances from coming in contact with the skin.

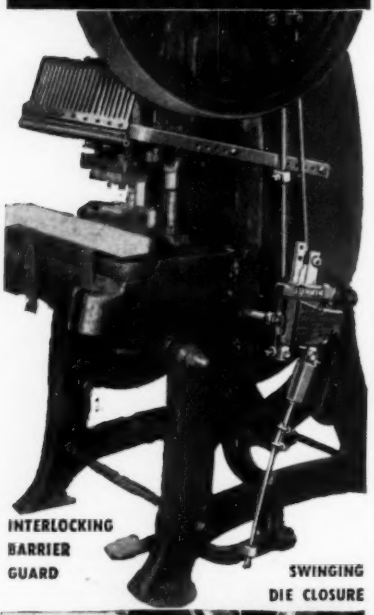
The disadvantages of barrier creams are that if the skin is not thoroughly cleaned before they are applied, the irritants may be trapped underneath the cream and infect the skin more readily; and, if the worker handles several kinds of irritants, against which one barrier cream does not give complete protection, a barrier cream is an impractical method of protection.

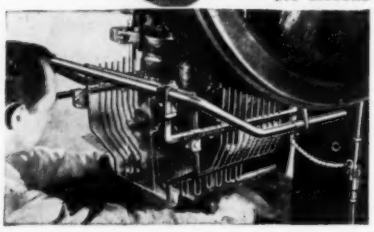
Dermatitis in industry is a serious threat to production schedules, worker morale and community health. Careful application of recommended protective measures by management and cooperation between employer and employee will check this menace before it sweeps through a plant.

Picture by courtesy of Boyer-Campbell Co.

For full descriptions of dermatitis protection products see pages 262–271 of "Best's Safety & Maintenance Directory," 1952–53 edition.

JUNKIN
SAFETY GUARDS





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JUNKIN safety guards prevent press accidents, afford maximum protection, increase press production, lower insurance costs and generally improve plant morale. Make an investment in safety now and investigate Junkin Safety Guards for primary and secondary punch press operations. Write for free catalog "The Key to Protection".

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SAFETY APPLIANCE CO.
101 S. FLOYD ST.
LOUISVILLE 2, KENTUCKY

(Use Key # H-28 on card on page 73)

INSIDE THE TRADE

Safety Equipment Assoc. Elects

STANLEY C. HERBINE, of Reading, Pa., has been elected President of The Industrial Safety Equipment Association at the annual meeting of the trade group. Mr. Herbine is Industrial Sales Manager of Willson Products, Inc., manufacturers of personal safety equipment at Reading, Pa.

Metal Company Appoints

THE appointment of Erhardt C. Koerper as Works Manager of Ampco Metal, Inc., Milwaukee, Wisconsin, is announced by J. D. Zaiser, President of the firm.

For the past 9 years, Mr. Koerper has been Assistant Executive Engineer engaged in special Products Engineering and the coordination between Laboratories and Production at the A. O. Smith Corporation.

As Works Manager of Ampco Metal, he will direct the Company's entire production activity. Ampco produces special copper-base alloys, principally "Ampco Metal," a series of high aluminum, high iron aluminum bronzes.

Solvent Firm Adds Warehouse

WAREHOUSE stocks of the solvent products of the John B. Moore Corporation have been established at Kansas City, Mo. to accommodate the Midwest purchasers of its materials, it is announced by John B. Moore, president of the corporation. The Kansas City location is in addition to warehouse stocks now carried at Pittsburgh, Pa., Boston, Mass. and Detroit, Mich.

W. H. Brady Co. Appoints

TWO promotions and two new appointments involving sales personnel are announced by W. H. Brady Co., manufacturers of wire, pipe and conduit markers and other self-sticking industrial products.

Westley J. Tuite, formerly Chicago district manager, is promoted to the position of general sales manager. Mr. Tuite will headquarter at the company's main office in Milwaukee. Fred C. Kluhsman is appointed Chicago district representative, headquartering in Chicago. Joseph I. Stone, formerly eastern district representative, is promoted to eastern district manager, with headquarters at the company's branch office in Newark, New Jersey. Paul J. Leonard is appointed mideastern district representative, with offices at Philadelphia.

Omaha Dealer for Clark Equipment Co.

THE Christy Equipment Company, with headquarters at 2056 Farnam Street, Omaha, Nebraska, has been appointed by Clark Equipment Company, Battle Creek, Michigan, as a new dealer for Clark's fork lift trucks, powered hand trucks and towing tractors. The Omaha dealership replaces the Clark dealership in Sioux Falls, South Dakota.

MSA Elects

ELECTION of two new vice presidents of Mine Safety Appliances Company is announced by J. T. Ryan, Jr., president of the firm.

Those elected are C. M. Donahue, manager of the Mining Department and the International Division, and E. G. Sanner, Manager of Manufacturing.

New Detectron Plant

THE Detectron Company, designers and manufacturers of precision electronic detection equipment, has announced the completion of their new factory in North Hollywood, California.

The new plant features air-conditioning for both factory and offices and scientifically planned lighting that assures the necessary high efficiency required in the production of precision radiation and detection instruments.

Sign Salesman Rejoins Company

A. B. (DAVE) BALCH, formerly with Wagner Sign Service., Inc., Chicago, and for the last eight years with Southern Neon Displays, Atlanta, has just rejoined Wagner Sign as traveling sales representative.

Sanding Machine Co. Opens New Branch

THE opening of a new Los Angeles branch of the Clarke Sanding Machine Company, Muskegon, Michigan, has been announced by Ernest Cooper, company president. The branch is located at 4711 W. Washington Blvd.

All floor maintenance machines produced by Clarke along with wet and dry vacuum cleaners and rental and contractor sanders will be displayed in the 4,000-square foot building.

Chain Firm Appoints Safety Consultant

COLUMBUS McKinnon Chain Corporation has announced the appointment of M. J. McCarthy as industrial safety consultant to the firm's alloy chain division. His services will be available to users of the company's products. Mr. McCarthy was formerly Director of Safety for Fisher Body Division, General Motors Corporation.

MSCO® PELLENT...

NO MORE MOSQUITO BITES

No more lost time fighting mosquitoes, flies, chiggers, etc. . . . no more swatting around in dangerous quarters . . . no more itching welts to distract workers. An application of Pellent lasts at least *six hours* . . . costs less than 2¢. In handy *cream* form . . . no stickiness . . . doesn't come off easily with perspiration. Packaged exclusively by MSco under the Unit System to fit all standard unit type first aid kits. Six non-leaking tubes per Unit. Write for descriptive folder.

Medical Supply Company

"It pays to buy—from Medical Supply"

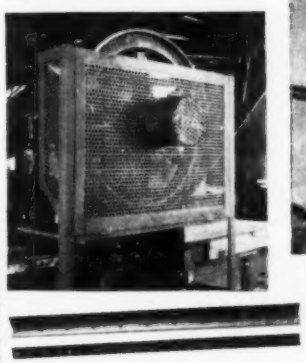
ROCKFORD, ILLINOIS • IN CANADA, IT'S SAFETY SUPPLY CO.

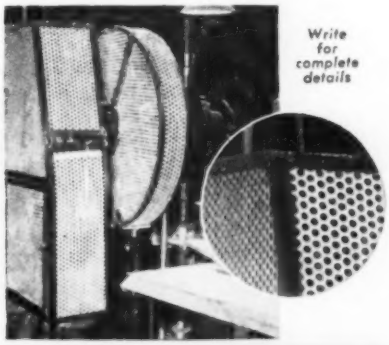
(For further details, use Key # H-29 on free Inquiry Card on page 73)

H & K *Standardized* SAFETY GUARD PARTS

make guard building so easy. With our perforated angles, bands and gussets the sturdy frame is quickly assembled and mounted on our detachable floor posts and sockets. Then our perforated sheet, which provides fine visibility and a smooth easily cleaned surface, covers the frame and from then on limbs and lives may be saved.

Safety inspectors recommend—shop operators are grateful — "GUARD AND SAVE LIVES".





Write for complete details

The Harrington & King PERFORATING CO

5624 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

(For further details, use Key # H-30 on free Inquiry Card on page 73)

IGNORE IT . . . IT'LL GO AWAY!

THERE is less excuse than usual for this accident. It occurred when a cast iron boiler blew up. No one was injured, but it was discovered that the cracked section of boiler plate couldn't be replaced without dismantling and reassembling the boiler completely for lack of room in the boiler room! This condition was never mentioned in any inspection report although the boiler had been insured for years. A condition such as this should have been noticed and reported on the first inspection. It took a lot of ignorance or laziness to allow this accident to happen. Don't crowd anything or anybody, they're not made to take it. If they're people, there morale will drop and they'll begin having lots of accidents; if they're boilers, they'll just get up a full head of steam and make room!

TAKE COVER!

BLASTING operations are dangerous, for the simple reason that any use of explosives is dangerous. However, there is no reason why workers who handle explosives need be injured if they use their heads and keep away from the blast. Occasionally a worker is injured when he is actually handling the explosive. The only remedy for this is absolutely thorough training. The largest single cause of injuries, however, is lack of adequate shelter. Either the worker took inadequate or no shelter or left shelter too soon. The toll of injured includes the blaster who stood only 12 feet away when springing a hole, the blaster who failed to count his shots and walked back into a blast, the blaster who walked up to the charge and pushed the plunger on the battery, the bulldozer operator who simply stood behind his tractor when the blast went off, the man who was standing in the open 200 feet from the blast, and another man in the open 300 feet away, and the man who came out before the "all clear" was sounded, and the worker who didn't wait until all debris had stopped falling, and the man who thought standing behind a tree was adequate shelter, and so on and so on. All these accidents were due, for one reason or another to inadequate shelter. Firecrackers are outlawed in many places because people never learned to keep away from them when they went off . . . explosives are considerably more dangerous.

ONCE IN A LIFETIME!

FOR 9 years this shipyard worker had faithfully worn his hard hat. He never failed to put it on when he went to work and he never took it off unless it was safe. He followed good safe habits too. In 9 years he never had an accident. After that length of time he might have gotten careless, but he never did. One wonders if some of his fellow-workers didn't kid him from time to time about his consistent attention to safety. Anyway, he never paid any attention to them. One day safe habits paid off. A 55-gallon drum of rust preventive fell 30 feet from the deck of a destroyer and struck the worker on the head. The drum weighed 441 pounds. The crown and cradle lining of his safety hat took the force of the blow, although he suffered fractures of the head, shoulder and leg. Now, instead of being dead and buried, he has recovered from the injuries and has returned to work. The force of the falling drum was computed at more than 13,200 foot pounds. It was his first accident in 9 years, and 9 years of following safety precautions paid off. Indeed, if he had gone through his life following safety procedures and never been injured, the safety habit would still have paid off. Complete head protection programs are an essential part of safety, as management that backed up this worker's safe performance will testify.

NEVER TOO OFTEN!

UNLESS science can find a way to employ monkeys for ladder work, inspection of ladders is a must. When the rung brakes, it's almost always too late to prevent an accident. In this instance, a worker was standing on a ladder on derrick rig to untie a chain. Suddenly the rung broke, and only his quick thinking avoided an accident. He grabbed another rung and kept himself from falling. Frequent, careful ladder inspection is the best thing to prevent this type of accident rather than relying on the instantaneous reaction of the victim to save himself.

Learning..... the hard way

WHO'S A HICK?

A FIELD worker was cleaning the blade of a mower with the motor running. The clutch became engaged. You can guess the rest of the story. Anyway, the worker lost two fingers. Of course, you say, how could he be so stupid. He must have been instructed to turn off the motor of the mower if he had to clean the blades with his fingers. What a dumb hick! Just a minute, how many "city slickers" stick their hands in fan blades and belts or try to repair any one of a thousand kinds of machines while the motor is running? There is only one moral to this story anywhere—if you have to put your hands on it, turn it off!

SPEAK UP, MAN!

A MAN was working in a storeroom, moving pipes. He smashed his finger when the man who was helping him moved a pipe without warning. The finger was caught between the pipe and the pipe rack supports. If he had been warned he could have moved his hand out of danger, but the other man never raised his voice. It doesn't make a great deal of difference why there was no warning. It all stems from thoughtlessness. If both men had had the fact that they were working together in mind, as they should have had, there would have been no accident. There are very few jobs in which you work so entirely by yourself that you never have to give the other fellow a thought.

TOUGHER THAN SKIN!

THE knights of ancient times had the right idea. When they went into battle to slash and hew down their opponents they wore steel mesh to protect themselves from the occasional cuts they might themselves receive. Today steel mesh gloves can be the difference between a deep wound and a mere slip. A worker in a meat packing plant cut a deep gash in his left thumb and two fingers when his knife slipped. A steel mesh glove would have prevented this injury. It's the old story of getting workers to use protective equipment. In about half the meat plants visited by safety engineers, the management insists that they cannot persuade the workers to accept this protection. In the other half, all the men are found to be wearing protection, and insisting on it! Maybe the answer is that the men haven't had the protection demonstrated clearly to them. We suggest that the worker who cuts himself might make a good demonstrator!

STAND BACK!

WITH one employee holding chisel and another using the sledge hammer, two roustabouts were chipping a hole through a 6-inch concrete wall to run a pipe from one room to another. When relieved by a third man for a rest, the man using the hammer stepped back about 10 feet. At this distance a piece of chipped concrete hit him in the eye, breaking the right lens of his safety goggles. Since he had not taken off his safety goggles his eye was uninjured. When taking a rest from this sort of job a worker should move far back, out of the reach of possible flying objects. This story points up something we have been trying to get across for a long time. If you are wearing safety equipment, as this man was, you can make a mistake and it won't be your last one. You have a chance to learn and not make it again.

A PLACE TO STAND . . .

ARCHIMEDES, the discoverer of the lever and fulcrum, is supposed to have said "Give me a place to stand and I will move the earth." In industrial safety this sentence might be paraphrased to read "Give a workman a place he can stand and he will be able to perform his work safely." Most high maintenance accidents result from insecure footing, many materials handling injuries stem from the same cause, and plain and simple falls on wet or slippery floors are a cause of many accidents. It's management's responsibility to provide the firm footing necessary for safe job performance. For example, a worker lost his leg recently when he fell into a conveyor while trying to remove an overhead wire. True, he shouldn't have been standing on the edge of the conveyor trough, but if a cover or abrasive plates had been placed over or between the rollers of the conveyor, he could have accomplished his task with safety.

Safety for Women

(Continued from page 14)

tact with the worker will be far easier than trying to persuade or appeal to her after she is on the job. What safety clothing is, and why it is needed should be explained just as the need for a certain tool is explained; and, then it should be assumed to be as essential a part of the job as the right tool.

Safety clothing essentials are first, safety; secondly, convenience (well-cut garments contribute to freedom of movement); ease of laundering; wearability; and suitability to the temperatures in which the clothing is worn. Any material which can be lightly starched will prevent the absorption of dirt and dusts and will wear longer. Women require the same safety features as men, but greater attention should be given to good appearance. They seem to prefer choices of color too. A slack suit which permits a change of blouse is preferable, sleeves should be short and trouser legs should taper off at the bottom with no cuffs to catch on objects and cause falls.

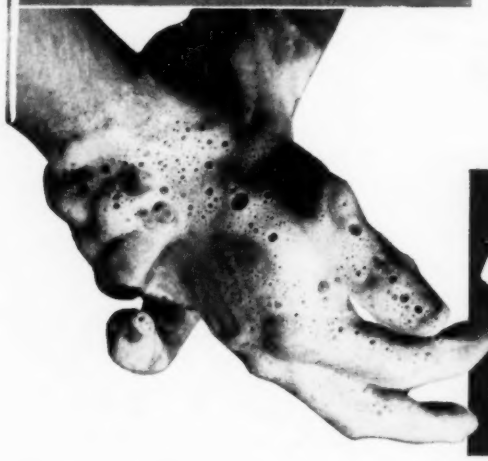
Women's hair is a hazard to their employment on moving machinery. It is possible for electrical attraction in moving machinery to draw free hair into the machine, so women's "crowning glory" should be covered for such work. The cap should be lightweight and well-ventilated. The visored-type not only protects the eyes against glare but also serves as a warning signal if the wearer gets too close to machinery.

Falls

It seems as if it is always "fall" season. According to National Safety Council statistics, the 1951 fatality rate from falls was 11.7. While handling objects is the principal source of compensable injuries in industry, falls cause the next largest number of total injuries. Fatal and permanent total injuries resulting from falls are in second place; in permanent partial injuries falls hold third place. Falls are a major source of women's injuries, ranking first in most states reporting. Falls may be caused by wet or slippery floors, unprotected stairways, poor lighting or cluttered aisles. If good housekeeping in a plant is important, it is especially important where there are women workers.

Improper shoes, especially those with high or run-over heels, have been responsible for accidents to women. Toeless or sandal-type shoes are not suitable for factory work, particularly where heavy materials are being handled. Foot arches have a tendency to give more easily, if the woman is the type that wears high-heeled shoes. Height of the heel is most important. It should be remembered that for a normal person a three-quarter inch heel will throw the body forward about 2 inches. In order to stand correctly and in good position, the muscles of the back, thigh and calf must contract. In time, the con-

MECHANICS *Hand Soap*... that won't chafe the skin.....



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(For further details, use Key # H-31 on free Inquiry Card on page 73)

tinual contraction of these muscles has a tendency to cause pain and muscle exhaustion in the back and legs. Complaints from women regarding working conditions may in reality be due largely to their type of footwear.

The white-collar worker is the forgotten man or woman of safety in most industries. Management is so immersed in accident-prevention programs for plant workers that it often forgets that office and clerical workers in the company also face hazards. No individual safety program is complete unless it is directed towards the elimination of all hazards and unsafe acts regardless of where they appear; and the office and the office worker should be no exception, particularly where such work is a major operation. It goes almost without saying that the major single cause of disabling injuries to clerical workers is falling. Female workers predominate in this type of injury. Falls outside are due chiefly to ice and snow on sidewalks and in parking lots; inside buildings they are the result largely of polished floors. Many unsafe personal factors are associated with falls on the same level within buildings, such as the wearing of high-heel shoes, hurrying, inattention, quick turns and stops. Falls on steps occur primarily from hurrying and failure to hold onto the hand rail.

Falls from chairs and over or against open desk and filing cabinet drawers also have resulted in disabling injuries. Incidentally, the male clerical worker is injured more often in this type of accident than is the female worker. In several accidents of this type, disability resulted from failure to obtain prompt medical attention.

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For years a prime favorite of respirator users. Sponge filter saturated in water provides moist air — cool, comfortable breathing. Keeps out dust, fumes, smoke, paint spray. Face mask is of soft white rubber. Maximum visibility. Automatic valve exhausts breathed air instantly. Wear while paint spraying, or as protection against gases, dusts, smoke, fumes.

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H. S. COVER, South Bend, Ind.

(For further details, use Key # H-32 on free Inquiry Card on page 73)

Participation in Safety

Emphasis must always be placed on the participation of the worker in safety programs. This brings up two other factors. One is the desirability of having women on plant safety committees. Everyone concerned with education of any sort knows that participation on the part of the learner is the strongest force for arousing and sustaining interest. Safety should certainly be the responsibility of the worker as well as of management; and this responsibility can be fostered and developed through safety committees. When women constitute a part of the labor force in a plant, they should take their share of this responsibility; and they should, conversely, be given an opportunity to develop their ideas, and to contribute their part of the solution to the safety problems they face and especially those peculiar to themselves.

In one year's study of accidents in a large segment of the Air Force when women constituted nearly 45 percent of the working force, they sustained only 22 percent of the lost time injuries with a frequency rate of 3.19, which was 65 percent lower than the frequency rate for males. It is true, however, that 45 percent of these women were employed in offices; but comparing non-office working personnel only, the injury frequency rate for women was 50

percent lower than that for the male working force. There were 7 occupation groups for women which had a frequency rate of over 10. Two of them, maintenance mechanics and carpenters, had higher rates for women workers than for male.

Accidents from strains and overexertion were twice as common for men as for women. However, 39 percent of the accidents to women were falls, as compared with 21 percent for men. Over two-thirds of the falls sustained by women were falls on the same level. Half of the accidents to women were associated with only two agencies; working surfaces (28 percent) and vehicles (23 percent).

There are certain points at which the employment of women entails special consideration for their safety. These points are not numerous; nor do they imply serious limitations to the employment of women. With their capacities recognized and fully used, women have proven themselves consistently to be proficient and dependable members of the labor force. Their problems happen, in some instances, to be different from those of men workers. So far and no farther should a safety program for women be specialized.

Remember also, many working women of the present are and will be raising and influencing the industrial worker of the future. Certainly there is a transfer value in accident-prevention. The worker who is indoctrinated in safety awareness on the job will, doubtless, think more of acting safely off the job and be more likely to so influence others.

From an address presented at the 23rd All-Ohio Safety Congress.

Pictures by courtesy of American Mutual Liability Insurance Co.

Hotel Safety Course

NEW YORK UNIVERSITY'S Center for Safety Education, in cooperation with the Hotel Association of New York City, will offer a new course in accident prevention during the fall term for managers and other hotel personnel.

Edwin F. Ahern, director of training and safety for the Hotel Taft, New York City, will be instructor for the 15-week course, to meet from 3 to 5 p.m. on Thursdays beginning September 24. All classes will be conducted at NYU's Washington Square Center.

Topics to be covered include the history of accident prevention in the hotel industry in New York City; employee safety; accident sequence; predominant unsafe acts, conditions, and remedies in catering, restaurants, and kitchens; housekeeping, engineering and maintenance, front service, and clerical help safety; elevator and mechanical safety; basics of supervision; methods and techniques of employee training; accident "repeaters"; public liability; and hotel fire prevention.

Enrollment in the course will be limited to 30 persons. Hotel personnel interested in registering should contact Dr. Walter A. Cutter, assistant director of the NYU Center for Safety Education, 1 Washington Square North, New York City.

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The Fire Front

May Fire Losses Up

ESTIMATED fire losses in the United States during May amounted to $64,239,000, it is reported by the National Board of Fire Underwriters.

According to Lewis A. Vincent, NBFU's general manager, this $64,239,000 loss represents an increase of 3 percent over losses of $62,354,000 reported for May, 1952, and a decrease of 4.6 percent from losses of $67,362,000 for April (1953). Losses for the first five months of 1953 now total $364,437,000, an increase of 5.3 percent over the first five months of 1952, when they amounted to $346,068,000.

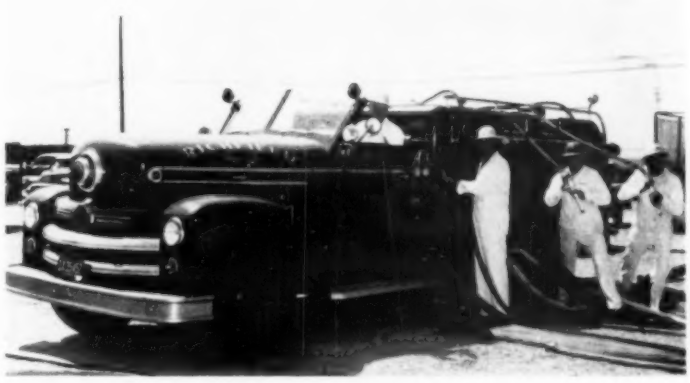
These estimated losses include an allowance for uninsured and unreported losses.

New Fire Hazard Trends

WIDESPREAD improvements have been made in municipal fire protection during the past year, particularly with regard to waterworks and fire department equipment and apparatus, H. W. Miller, chairman of the National Board of Fire Underwriters' committee on fire prevention and engineering standards, reports.

In addition, Mr. Miller explains that the committee has observed certain trends closely and has adapted and expanded its work to fill new needs created by them. For instance, a considerable number of large loss fires have occurred in com-

(Continued on page 64)



Fire truck carries dry chemical, foam and water for fighting gas and oil fires.

Dry Chemical Fire Truck For Oil and Gas Flames

A FIRE truck, equipped with 3 different fire-fighting mechanisms, has made its first public appearance at the Richfield Oil Corp. refinery in Wilmington, Calif. With some 200 fire-prevention officials and safety engineers watching, a 40-man crew demonstrated the truck's 3 different fire-fighting methods, singly and in combination, extinguishing billowing oil and gas fires in a matter of seconds.

The first method brought into play a 2000 lb. dry chemical tank from which 4 hose lines sprayed a compound of sodium bicarbonate and other chemicals at the rate of 1300 lbs. per minute. This device, for combatting flammable liquid fires, works by smothering the flames, and is especially effective in putting out fires atop flues, gas tanks and other inaccessible places.

Supplementing the tank was another 800 gallon tank filled with high-expansion liquid foam, and a water pump, powered by a 285 horsepower engine and capable of pumping 2800 gallons of water per minute through 8 additional hose lines. The foam mixed with water, forms a "blanket" to smother flames on horizontal surfaces, such as the ground. Water can also be used separately, as a cooling agent to prevent gas and oil fires from spreading.

According to M. B. Henry, Supervisor of the Fire & Safety Department at the Wilmington refinery, the new truck is the last word in equipment for fighting gas and oil fires. The Richfield truck weighs 30,600 lbs. fully loaded. Its chassis and engine feature triple ignition and a specially designed cooling system.

Picture by courtesy of Ansul Chemical Co.

Stop throwing money away—as King Wrong is doing! Worn gloves of all types can be salvaged by your industrial launderer at a fraction of new glove cost. After the special salvage process they're soft, clean, sterilized, repaired—free of accident-inviting holes and rips. For information on glove salvage write to:

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(For further details, use Key # H-34 on free Inquiry Card on page 73)

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1. Rail-guarded "Safety Level" platform.
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Dayton safety ladders

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Dayton safety ladder co.
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In Canada: Safety Supply Co., Toronto

(For further details, use Key # H-35 on free Inquiry Card on page 73)

munities too small to be expected to provide the fire protection needed by the properties which burned. This condition is growing more acute as decentralization of industry progresses.

Another trend is the changing character of industry, together with an increase in the use of potentially hazardous processes. There is also a trend in warehousing, in an effort to increase efficiency of operations, to use large floor areas and higher stock piling.

"In many such cases," Mr. Miller says, "the volume of combustible materials in a single fire area is approaching, if not exceeding, the limits where conventional types of fire protection and extinguishment devices can be expected to be effective."

Static Control Stops Fires in Powder Plant

STATIC, generated in the manufacture of smokeless powder or carried on persons entering dangerous areas in the plant, caused arcing which presented a constant and serious explosion hazard at the Naval Ammunition Depot, Crane, Indiana. Though efforts to eliminate the static included the grounding of machines and rigid regulation over clothing worn by operators, static continued in hazardous intensities. The result, of course, was that hazardous conditions remained uncontrolled.

The solution was to protect dangerous areas with multiple automatic permanent installations which give both an audible and visual warning whenever hazardous static develops on machines or anyone carrying static potential enters the area. This warning monitor system is in operation 24 hours a day and gives warning instantly and automatically, both in the particular area where the static hazard is located and also on a central control panel in the Safety Engineer's office. This central control panel shows which of the several protected areas has

(Continued on page 66)

PLANT FIRE BRIGADE...

Key to a City's Fire Control Program!

THE city of Anderson, Indiana, isn't taking any chances. It knows that only an expertly-trained fire department can keep its citizens secure and happy. It knows also that only with the fullest cooperation of Anderson's small industries can maximum protection be obtained.

The city has just been awarded first place in the United States for the best 1952 Municipal Fire Prevention Week program in its class, sponsored by the Fire Prevention and Clean-up Campaign Committee of the National Fire Protective Association. Anderson also placed second among all cities in the state for its year-round fire prevention program. Recognition of its fire prevention activities is familiar news to the city. In previous years, the state has accorded it many honors: 1942, first place; 1944, first place; 1946, second place; 1947, first place; 1948, first place; 1949, first place; and in 1951, third place. This is the first year, however, that Anderson has achieved national recognition for its fire prevention campaign.

A major contribution to the city's outstanding record has been made by the members of the "Small Industries Fire Prevention" group. Among the active and willing members of this group is the 36-man fire brigade of Anaconda Wire and Cable Company's Anderson Mill. These men realize how much fire prevention and fire-preparedness means to the security of their jobs and families. They devote much time and energy to the extensive study and training which qualifies them not only for prevention and fire-fighting, but also for first-aid and rescue work as well.

The brigade members are individually selected, on the basis of their interest in fire prevention and

willingness to become active members in all training courses.

The training program is divided into 3 sections: rescue, fire-fighting and first-aid. All men in the brigade are required to complete regular Red Cross courses in standard and advance first-aid. Members must be entirely familiar with methods of combatting any kind of fire which might break out at the mill. Regular courses and simulated fire-fighting sessions are held in the plant. In addition, members are able to take advantage of the cooperation offered by the Anderson Fire Department. City firemen visit the plant regularly to instruct in handling hoses under high pressure, in "run-throughs" with various types of hand extinguishers and other portable equipment, and in other phases of fire-fighting. Brigade members have a good operating knowledge of the mill's sprinkler system.

The local fire department and insurance-carriers make frequent inspections of the mill, and make the necessary recommendations to the plant safety director. He in turn interprets them to brigade members or has them mimeographed in the form of a memorandum for study by brigade members.

Training Methods

During the winter months, regular training meetings are held once a month at the mill. During the summer, refresher courses keep the men up to the mark. Fire brigade members must attend all meetings and refresher courses, to assure that fire-know-how is always at their finger tips and foremost in their minds. While some classes are "dry-runs", many are real experiences in fire-fighting. Generally, a fire is set in the plant yard, and students have the opportunity to observe the more experienced among them extinguish it. Only when they fully understand the problems involved are they permitted to take part themselves in such a demonstration.

Not content with training in the ordinary methods of controlling fires, brigade members keep abreast of new techniques in industrial fire-prevention. For example, after seeing films on some particular aspect of fire-fighting, the men discuss what they have seen and then go out to try to emulate it in actual practice. Then they return to the classroom and diagnose what they have done and what degree of success they have achieved. Finally, they re-run the same films, so that the lessons learned will stick with them.

Whenever a fire occurs in any department of the mill, it is carefully studied in the fullest detail. The departmental supervisor fills out a form describing the kind of fire, types of extinguishers and number, amount of damage and estimated cost; and most important of all, remedies for future fires of a similar type. The fire brigade studies this material, and decides what methods and equipment, if any, might have been used to get the fire under control more quickly. Research is made into the cause of the fire, and precautionary steps are planned for the prevention of fires of a similar nature. Records are kept on every fire, no matter how minor, for the brigade knows that even the smallest outbreak can teach an important lesson, and can help to educate plant personnel on causes and prevention. The plant is zoned and the heaviest protection goes into the areas considered most hazardous.

The 36 members of the mill's fire brigade have proved to be cooperative and resourceful students. They are in constant attendance, intensely interested in everything that goes on in their classes, and offer many useful suggestions on how the plant can improve its fire prevention system.

Each fall, during Anderson's observance of fire prevention week, the brigade gives a demonstration which dramatizes its participation in the city's unusual fire record. It is the strong cooperation between the city and its small industry fire brigades which has given Anderson the National Chamber of Commerce high rating in the small industry section.

Pictures by courtesy of Anaconda Wire and Cable Co.

Static Control

(Continued from page 64)

the dangerous static condition and permits the Safety Engineer to take immediate measures to eliminate it.

He is assisted in eliminating the hazard by a portable static locater which has a very sensitive probe. It tells the exact location of the hazardous static condition, determines the intensity of the charge, and also tells whether the static charge is a negative or positive charge. This instrument is not affected in its accuracy by stray electrical lines of force in the air, and permits exact determination of the location and nature of each static charge.

Results show no fires or explosions since installation of the static warning and detecting equipment. Instant detection of the hazard has provided control over violations of safety rules by personnel. Morale and production have been improved by elimination of static hazards.

These static-control instruments are approved by Underwriters Laboratories for use in class 1, groups C. & D. hazard areas. Originally developed for use in hospital operating rooms, they are useful for locating sources of static generation and as automatic warning protection against hazardous static in refineries, rubber and plastic coating operations, photographic film plants, smokeless powder and high explosive plants, grain elevators, flour mills, and other industrial operations where the existence of unsuspected static charges constitutes a serious fire or explosion hazard.

Scholarships Honor W. Graham Cole

THE Center for Safety Education at New York University has announced the establishment of the W. Graham Cole Scholarship Fund for the 1953–54 academic year.

Ten study grants of 25 dollars each will be awarded in memory of the late Mr. Cole who was associated with the Metropolitan Life Insurance Company. Five of the

scholarships will be given out each term to students of promise who need assistance in beginning or continuing their studies in the Center's evening program.

In announcing the awards, Dr. Herbert J. Stack, director of the Center, said the grants "constitute recognition of Mr. Cole's devotion for many years of his life to the cause of greater safety throughout the country."

The awards will be made by the Center following recommendations by a selection committee to be composed of representatives from the board of directors of the Greater New York Safety Council, the Metropolitan Chapter of the American Society of Safety Engineers, the commercial vehicle section of the Greater New York Safety Council, the Metropolitan Life Insurance Company, and New York University.

Persons interested in competing for the grants may obtain application forms from Dr. Walter A. Cutter, assistant director of the NYU Center for Safety Education, 1 Washington Square North, New York City.

Frederick J. Koeth

FREDERICK J. KOETH, manager of Bausch & Lomb Optical Company's protective eyewear department, died suddenly June 4th.

Born in Rochester 65 years ago last March 20, he was widely known as the "father" of the firm's safety-eyeglass program which he inaugurated in 1937. Since then the extensive program has played an important role in safeguarding the eyesight of millions of industrial workers as well as Army and Navy personnel.

A 51-year member of the Bausch & Lomb staff, Mr. Koeth began his career as an errand boy after attending Rochester Institute of Technology. In 1909 he became an ophthalmic salesman in the company's New York Office. Before returning to Rochester in 1918, he studied optics at Columbia University's evening school.

Lighting Is Protection

(Continued from page 22)

an environment that attracts attention in any respect, then it is to that degree, controlling or push-buttoning you. The working environment cannot be that kind.

The reflection factors of the low emotional response colors are known, so the engineer, finding that he needs a specific reflection factor in a part of the field can tie this reflection factor to any one of a row of colors on his chart, leaving the choice of the exact color to others, but tying the choice sufficiently to make sure that he will get the brightness effect he needs for each part of the interior.

While to the engineer, the fact is conclusive that objective orientation is largely a matter of vision, and that an accident of the falling, bumping, cutting or scraping variety is due to a failure in the objective orientation process, and so is related to inadequate or misleading visual clues and hence improper lighting, it may not be so conclusive to people not accustomed to this approach. For such people it is important to stress other kinds of evidence. For example, a statistical study of industrial accidents shows that the eyes are involved in 4 percent of the accidents, the head 7 percent, arms 9 percent, trunk 20 percent, hands 8 percent, legs 13 percent, feet 8 percent, toes 8 percent, general 4 percent—and, fingers 22 percent.

In other words, 30 percent of industrial accidents happen to the hand and fingers. The implication is strong that, in the absence of satisfactory visual clues many workers are forced to rely unduly on their sense of touch.

A group of workmen at a battery of drilling machines were constantly getting their fingers lacerated on the emery wheels to which they turned to grind off rough spots on their work. For a while they were blamed for carelessness, but when the accidents persisted an expert was called in. The emery wheels were lighted by 75 watt lamps in reflectors, one to each wheel. The illumination was ample. However, the reflectors were

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(Use Key # H-37 on card on page 73)

hung in such relation to the work that the lamp filaments were visible to the men as they operated the wheels. This caused their pupils to "stop" down, as in a camera. At the end of a day the tiny muscles would relax, too much light would flood through and in that fatigued, partly-blinded condition the men would grope every now and then, and grind their fingers instead of the metal. When the lamps were fully shielded the accidents stopped; that is, when the imbalance in the light from off-axis directions in the worker's field of view was corrected.

The war blackout figures are another indication of the relation of light to accidents. During the war pedestrian fatalities rose during the blackout to seven times the daylight rate despite the severe reduction in night traffic.

The rate at which we see depends upon how much light we have. The more light the faster we see. The faster we see the less time do we need to see and the more time is left to complete a safe reaction to an impending hazard. When you have very little light, it takes a long time to respond to a change in the environment.

A study of space lighting accidents in the New York subways, published recently, showed a drop of 52 percent in the accident rate as a result of suitably raising the illumination at the accident spots. It is interesting to note that the prediction of probable reduction in accident rate from the light-accident curve also was exactly 52 percent.

A street lighting accident study in Detroit shows that a modernization of the lighting brought night accidents down from 58 to 18 deaths. The daylight deaths rose in the meantime to 13. The night accident rate almost came down to the daytime level. Continuing lighting improvement is expected to make the level the same night and day.

In parts of this country local lighting is used just over machines. It takes a person 60 times longer to adapt his eyes from a high brightness to a lower brightness. For example, it takes that much time for a worker's eyes to adjust in moving away from his brightly-lighted work to a dark surrounding area to pick up a tool or a piece of metal, 60 times longer than going in the other direction, from dark to light. It should be obvious that the whole environment should be lighted, not just the machine. Wherever work is being done in an interior, the entire interior should be lighted even if there is only one worker there. It's a simple question of safety. The only safe environment is one from which luminous energy is coming to the eyes from every part of that environment.

Painting the machines in a special way is a big help. Common errors in visual judgment, particularly of movement and distance, that are accident breeders, can be cut down by this method. Proper contrasts should be provided between features of the work; between the work and the machine; and between the machine and the entire visual background. Contrasts that depress vision should be avoided. Shadows must be manipulated and controlled to various degrees, depending upon the situation. Highlights must be avoided sometimes and deliberately created at others. Where the sight-line combination is a contributing or leading factor in accidents the answer lies in providing the necessary conditions for certain critical seeing, and for safe, rapid, automatic visio-motor responses. This requires a complete analysis of the worker's total field of view, and a scientific balancing of the light that proceeds to the worker's eyes from every direction.

It is important to point out that the act of seeing is a partnership between eyes and light, and both must be considered together. Eyesight should be checked and defects corrected. Where goggles are worn other visual precautions should be taken, more light to compensate for absorption by goggles, for example.

The proper technique for lighting for safety is known in all its details, and engineers are available to translate their knowledge of the technique into accident-prevention practices . . . that will conserve our most precious asset—people.

From addresses delivered at the 22nd Annual Greater New York Safety Convention and before the 31st Annual Congress of the England Council of Optometrists.

Pictures by courtesy of Holophane Co. (Figs. 1, 2, 3, 5, 6, 7, 8 & 9) and S. F. Markham (Fig. 4).

Two Safety Engineers

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Manufacturers

(For further details, use Key # H-38 on free Inquiry Card on page 73)

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

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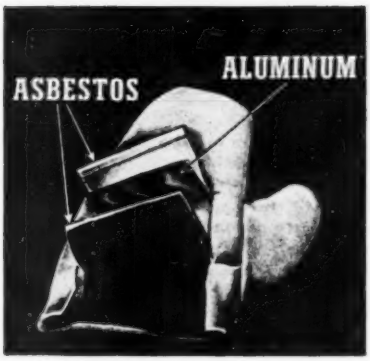


HEAT-REFLECTING GLOVE

(Use Key # 797 on Inquiry Card on page 73)

THE addition of an asbestos, aluminum-lined, reversible mit, to its regular glove line has been announced by the Milburn Company. This glove is said to reflect up to 90% of radiated heat, and is suitable for handling objects up to 1200 degrees Fahrenheit. The asbestos is also specially treated for high abrasion resistance.

FLOOR MACHINE

(Use Key # 798 on Inquiry Card on page 73)

THE new Hild Model "K" Floor Machine is equipped with a ⅓ H.P. heavy duty vertical motor which requires no lubrication. The 12½ inch brush spread and brush speed of 210 r.p.m. gives lively action for a hard finish on all waxed surfaces. Attachments are available to scrub, wax, polish, buff, sand and steel-wool floors of all kinds.

The machine weighs only 34 pounds—38 pounds with brush attached. It is reported to operate so quietly that maintenance work can be done at any hour without disturbing occupants of adjoining rooms.

A feature of the machine is a new power transmission system. Power is transmitted from motor to brush through a cog tooth belt made of rubber and nylon, reinforced with multiple strands of steel cable embedded in the rubber. It is quiet running and requires no lubrication.

The machine has a steel base with baked-on enamel crinkle finish and is fitted with a bumper of non-marking grey plastic. The handle is made of steel tubing, fitted with rubber grips and a cast aluminum switch box. A 30 foot non-marking grey rubber cord is furnished.

WATER-REPELLENT OINTMENT

(Use Key # 799 on Inquiry Card on page 73)

ROUGH chapped, irritated skin, resulting from frequent exposure to water and other substances, may now be effectively prevented by use of new Silicote Skin Protective Ointment, now being introduced by Arnar-Stone Laboratories, Inc. The ointment incorporates the newly developed silicones; repelling water and moisture in a manner, which, at the same time, allows normal skin respiration. It may be used either before exposure to prevent irritation, or therapeutically to facilitate healing. The silicones repel moisture, are inert, adhesive, non-toxic, and non-senitizing. The ointment is being found helpful in the protection of skin of outdoor workers, in protection of hands of dishwashers, soda fountain clerks, plasterers, leather workers, and many others.

REFLECTING ROOF COATING

(Use Key # 800 on Inquiry Card on page 73)

ONE of the greatest production-robbers in any factory is heat. When the temperature goes up, production goes down—workers lose their ambition—there's a general slow-down all along the line. Industrial plants and factory buildings can be insulated with a new liquid aluminum asbestos roof coating that reflects 95% of the radiant heat of the sun and reduces temperature inside the buildings as much as 15°.

Known as Aluminum Rane-Cote "Barrelled Air Conditioning," this roof protector has been extensively used as an insulator on large factories and other industrial buildings. Many industrial users have actually saved the cost of air conditioning installations. Those who already have air conditioning save on the operating cost by insulating with the coating. It is easy to use—requires no special tools, equipment or roofing experience. It goes on with a brush and quickly dries. An all-weather insulator, it helps keep buildings warm in winter. It is guaranteed to waterproof all types of roofs, except shingles, for 10 years under a Registered Roof Policy.

GRAY SUN GLASSES

(Use Key # 801 on Inquiry Card on page 73)

THE problem of protecting the eyes from excessive sun glare while retaining true color vision has produced a new neutral gray optical glass as a solution.

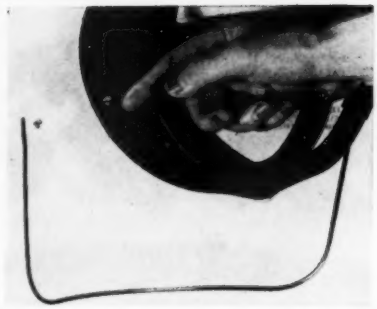
The glass, developed by the Bausch & Lomb Optical Co., after 5 years of research, absorbs 85 percent of visible light. It admits the 15 percent necessary for sharp vision, with no distortion of any color in the visual spectrum. The glass, which also eliminates potentially harmful invisible infrared and ultraviolet rays, has been made into lenses for the firm's new Ray-Ban G-15 sun glasses. Because the neutral glass preserves color values and their relationship, the ability to distinguish traffic signals and signs is not impaired—an important factor in highway safety. Since the glasses offer complete glare protection, headaches, eyestrain and fatigue are minimized. Development of the sun glass was begun by Bausch & Lomb ophthalmic scientists according to standards suggested by the armed forces vision committee. When the formula was developed, the armed services issued new specifications for sun glasses based on the neutral gray lens.

COAL MINER'S CAP

(Use Key # 802 on Inquiry Card on page 73)

A GLASS-FIBER coal miner's cap is announced by E. D. Bullard Co. The hat is the result of a survey among miners to discover what was needed in a protective hat in coal mines. Safety features include a groove in the crown which holds lamp cords snugly and prevents them

from being snagged. The groove also adds to the strength of the crown much as a girder does to a building. A trough around the crown keeps ears from being nicked when the cap is hit. The trough also doubles as a cord holder for side wired lamps. The crown itself is of molded glass-fiber composition, said to be stronger and have greater resilience than steel. Generous air space inside the crown and adjustable headband and hammock add protection to the hat. Comfort features include weight—10 oz., air space for coolness and easily removable headband for cleaning. The hat can be cleaned with soap and water, and comes in any color, which will not wear or wash off. Resin-bonded glass fiber acts as insulator, and is non-aging and non-deteriorating.



FACE SHIELD MOUNTS

(Ues Key # 803 on Inquiry Card on page 73)

INCLUDED in the new models of #300 Face Shields, announced by The Boyer-Campbell Company, are sliding buttons for the mounting of the windows on the headgear. This prevents the difficulty encountered when headgears warp due to moisture and heat. The fastener slides to conform to any change in size. While this slight change in position of the buttons makes headgears of conventional design useless, this innovation greatly extends the life of this type of equipment. This mounting has been adapted to plastic windows for general utility, screen windows for protection from heat and scale, and fibre fronts with glass holder for gas welding, scarfing, etc. This complete interchangeability makes the reduction of inventories on this type of equipment practical.

LIGHTWEIGHT CAST MATERIAL

(Use Key # 804 on Inquiry Card on page 73)

FOR the many thousands of people suffering bone fractures, dislocations, curvature of the spine or congenital bone abnormalities requiring casts, Melmac Orthopedic Composition, a plastic powder for making strong light-weight orthopedic casts, is announced by Davis & Geck, Inc. The new orthopedic cast material was developed by research and experiment in cooperation with American Cyanamid's Plastics and Resins Division and Stamford Research Laboratories. The product was used for more than a year in clinical work at Walter Reed Army Hospital. Several orthopedic surgeons have described the composition as the most important advance in orthopedic cast techniques in 10 years.

The strength of casts made with the composition is so great that casts can be up to ⅔ lighter in weight. Even though they are thinner, they still provide adequate immobility and support within a few hours after application. Casts are porous enough to permit evaporation of moisture from the skin. The thinness of the cast permits greater X-ray penetration and makes continued observation of the patient's progress easier and more accurate. Casts are water and urine resistant and can be soaked for several days in water without disintegrating. A solution is prepared by dissolving the contents of one can, including the proper amount of the required catalytic agent, in a pint of warm water. The bandages are then dipped in the solution and applied.

MAGNETIC PROBE

(Use Key # 805 on Inquiry Card on page 73)

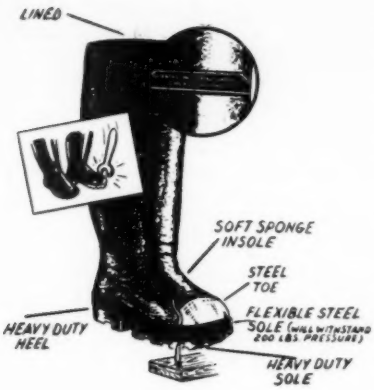
A NEW magnetic probe, made of super-magnetic alloy by General Scientific Equipment Co. is no larger than a fountain pen. Point of magnet is extended or retracted from a case by turning end-knob. Strength of magnet can be controlled by amount of extension. A pocket clip is provided for safe, easy carrying. The probe is particularly useful for re-

moving steel or iron particles from areas where such foreign matter is harmful, such as the operating area of electrical instruments or delicate mechanisms. It will also conveniently remove sharp particles of steel, iron or nickel from storage bins and retrieve magnetic particles from holes and similar hard-to-reach places. Assemblers and inspectors find the probe useful to test coat of surfaces for magnetic properties of the under-material. Plant first aid stations use the probe to remove steel splinters from the eyes or skin of employees. Nurse or doctor can adjust strength of the magnet for proper extraction to reduce pain or rupture of tissues.

HOISTING TOWER

(Use Key # 806 on Inquiry Card on page 73)

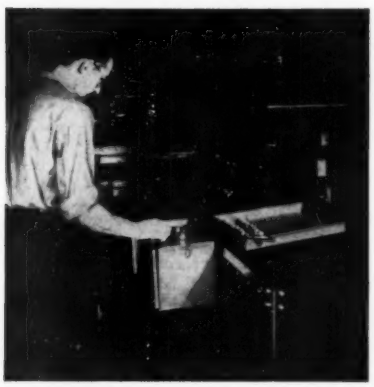
A NEW all-purpose material hoisting tower that assembles with standard parts is announced by Bil-Jax, Inc. The tower is designed for general contracting use for loads up to 4,000 lbs. and for heights up to 100 feet. "Open-stock" design permits erection of tower to any desired height, or the adding of sections at any time, to extend the height of the tower. The sections may also be used for other scaffolding purposes when the tower is not needed.



STEEL INSOLE SAFETY BOOT

(Use Key # 807 on Inquiry Card on page 73)

A KNEE-LENGTH rubber boot, with both a safety toe and a steel insole, is announced by Scientific Industrial Supply Co. The steel safety toe protects the wearer against foot injuries from falling, rolling and knock-against hazards. The steel insole is fully flexible and runs the entire length of the foot to prevent puncturing of the foot by nails, glass and other sharp objects. The boots are recommended for construction workers, ditch diggers, foundry workers, miners, quarriers, packers, etc.



FIRE-SAFE PARTS-CLEANING CAN

(Use Key # 808 on Inquiry Card on page 73)

A NEW plunger-type parts cleaning can is now available which can be attached to a bench convenient to the machine operator and enables him to clean parts as they come from the machine, make micrometer checks for accuracy or any other type of inspection required without stopping the machine or interfering in any way with the continued process of the work. Spoilage is thus reduced to an absolute minimum and accuracy of machine operation assured.

The unit is a sturdy, terne plate, seam welded rectangular container measuring 10" x 7" x 8" deep to permit washing of long narrow parts, small parts, and square or rectangular piece parts. It has a capacity of 2 gallons of solvent or cleaning agent and is equipped with a metal-perforated plunger dasher which completely covers the opening. Parts are placed on the conveniently located dasher as they come from the machine, pressure on the dasher submerges them in the solvent for quick removal of oil, grease and minute metal particles and upon release, the excess solvent drains down into the body of the container and the parts are ready for inspection. A hinged cover which folds back against the container to be completely out of the way during use is closed when the machine is not operating to minimize loss of solvent by evaporation. An important feature is that the can is self-extinguishing. The dasher itself acts as a flame arrester, and in case of fire on its surface, the surface film of the flammable solvent vaporizes, mixes with the air and burns off. Made by Protectoseal.

ATHLETE'S FOOT FUNGICIDE

(Use Key # 809 on Inquiry Card on page 73)

A NEW fungicide for the treatment of athlete's foot and ringworm is the product of Noxal Products Company. Combining an eye-dropper applicator with the fast-penetrating liquid solution that has killed spores of Trichophyton interdigitale in 60 seconds, the company has made application quick and easy. Clear, odorless, non-sticky, and greaseless, the fungicide will not bleach or harm clothing. It was used by the United States Olympic Track and Field Teams of 1948 and 1952.

PULMONARY-VENTILATOR

(Use Key # 810 on Inquiry Card on page 73)

A NEW instrument designed to alleviate symptoms of the silicotic, or the patient with emphysema or similar disease, has been developed by Mine Safety Appliances Company. The "Pulmonary Ventilator" distributes, under positive pressure, drugs which dilate the small bronchial tubes, thus permitting easier inhalation and exhalation on the part of the patient. Most such patients suffer from shortness of breath, the symptom most notably relieved by use of the new instrument.

Several hospitals and a number of physicians are already utilizing respiratory treatment employing the same principle—intermittent positive pressure—and the new device provides a simple technique for care of a larger number of patients. In a number of instances physicians have felt justified, after patients have had adequate training, in allowing them to use a pulmonary ventilator at home, reporting periodically to the doctors for check-up. Some industrial firms employing workers who have some silicosis or emphysema utilize this respiratory equipment in their dispensaries to make the workers more comfortable and better able to perform their work. Numerous hospitals in coal-mining areas, for example, maintain large treatment centers where miners may procure this treatment.

SAFETY HAT

(Use Key # 811 on Inquiry Card on page 73)

A NEW protective headgear is announced by Willson Products, Inc. Called the Super-Tough Hat, the headgear is said to differ from other hard hats principally in that the shell is molded in one piece of lightweight, moisture-proof plastic. It passes all required tests for impact-resistance, pierce-resistance, and dielectric strength according to the manufacturer. It is also resistant to many industrial acids and caustics in commonly encountered solutions.

There are two styles of hat. No. 1 has a "buffer" type vinyl headgear with leather sweatband and an elastic chin strap. No. 2 has a lighter type vinyl headgear, also with leather sweatband. Either style of headgear is attached to the hat by six suspension points which are molded into the interior of the shell so that no rivets or lacing pierce the hat. The headgear assembly can be changed quickly and the adjusting strap is marked by headsizes. The new hat features contours to deflect either falling or flying objects. Ample clearance between hat shell and skull provides an extra margin of safety and permits air circulation for cool comfort. Standard color for the hat is green, but red, yellow, brown and white are available also.

PLASTIC DRESSING

(Use Key # 812 on Inquiry Card on page 73)

FEMININE plant workers frequently incur the risk of serious infection rather than report to the first-aid station for treatment of minor hurts, because they feel that a protective dressing will be more unsightly than the hurt, particularly when soiled. The new Band-Aid Plastic Strips (strips of plastic adhesive tape with a small pad of absorbent gauze in the center), made by Johnson & Johnson take care of this situation. Their flesh color makes them inconspicuous and their smooth plastic surface sheds dirt and grease. On hand wounds, the dressings can be washed along with the hands. Waterproof, they don't get loose or soggy when wet. Because they are thin and elastic, they stay put on finger joints and other hard-to-bandage places without binding, permitting the most delicate operations to be performed with normal dexterity.

WINDOW GLARE SHIELDS

(Use Key # 813 on Inquiry Card on page 73)

VINYL, glass-adhering shields against intense sun glare, known as Filterzone Thermo-Glare Shields, are being successfully applied to window areas of factories, drafting rooms, airplane towers and hangars, schools, store windows, to cut raw sun glare and heat. Engineered lighting has become an important factor in architectural design and architects are giving more and more thought to the problems of improving both lighting and seeing. The elimination of glare, the undesirable by-product of lighting, is part and parcel of this whole effort and glare shields are offered as an effective method of toning down sky brightness and direct sunlight. The makers of the shields, Filterzone Autovision Co., are using a tough, chemically inert, flame and acid-resistant vinyl plastic which can be secured permanently to glass and, when desired, removed without difficulty. These shields filter out annoying glare, reduce eye fatigue and eliminate the need for painted windows or blinds. Thermal insulating is also provided with resultant reduction in air-conditioning load. Shields are applied merely by pressing them against wet glass. There are several colors available.

HAND-CLEANER STATION

(Use Key # 814 on Inquiry Card on page 73)

SUCCESSFUL results from installation of "hand care stations" in industrial plants is announced by Hammon Products, Inc. Each "station" consists of a gallon or quart dispenser of Hammon's Waterless Hand Soap and a wall cabinet of paper towels. No water is used in cleaning the hands, so the installations are located as required. This eliminates washroom congestion and cuts time loss away from the machines.

According to reports from industrial users, plant workers benefit with improved skin condition resulting from the lanolin and glycerin content in the lotion-type liquid.

DRY CHEMICAL WHEELED EXTINGUISHER

(Use Key # 815 on Inquiry Card on page 73)

THE manufacture of a new one-man fire-fighting wheeled engine for extinguishing large-scale B and C fires has just been announced by the American-LaFrance-Foamite Corporation.

It is a dry chemical wheeled engine,

with a capacity of 150 lbs. This new Model 150 is a companion-unit to the Model 350, the company's two-man engine with a capacity discharge of 350 lbs. of the Dry Chemical compound. The new Model 150 is 480 lbs. in weight, fully charged, and can be wheeled, maneuvered, and operated by one man. It carries the inspection and approval label of Underwriters' Laboratories, with B and C classification.

The expellent is dry nitrogen, with a sustained operating pressure of 200 psi during the entire period of discharge. All the contents can be discharged in about 45 seconds, if necessary. However, the nozzle lever has a spring loaded mechanism which permits opening or closing the nozzle at the option of the operator. Thus it is possible to conserve the dry chemical supply while the operator is shifting his position, or should he complete extinguishment with a reserve of the chemical still in the tank.

WHEEL BLOCK

(Use Key # 816 on Inquiry Card on page 73)

A NEW heavy duty truck and trailer wheel block, made of high strength cast alloy steel, recently introduced by the Calumet Steel Castings Corporation, is designed to hold heavy vehicles and loads.

Called the Casteel Safety Wheel Block, the new block incorporates a number of features that indicate positive, safe holding under even the most adverse conditions of grade, surface and load. Cast-in holes on the bottom plate permit nailing the wheel block to freight car or truck floors, shipping platforms, etc. for blocking heavy equipment during shipment.

The wheel block has a wide, curved tread plate which contacts the tire for even, safe distribution of the load. A heavy center rib support, designed to resist maximum thrust, gives the wheel block another margin of strength and safety. Heavy steel gripper teeth on the bottom plate keep the block from creeping or slipping, even on ice or snow. Provision for hook or chain attachment to the block is made by a cast-in hole on the center rib support. The owner's name may be cast on the bottom plate to identify its ownership and eliminate pilferage. The wheel blocks are painted Standard Safety Yellow for high visibility. Weight of each block is 12 lbs.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Eye and Face Protection 508
Sellstrom Mfg. Co. Included in this 56-page catalog are goggles, welding helmets, lenses and plates, safety shields, respirators, sweatbands, headbands and visors. Many different types of goggles for various occupations are offered, and faceshields and helmets are emphasized.

Sweatband 509
American Allsafe Co., Inc. This 2-color, 4-page brochure discusses a cellulose headband designed to absorb perspiration and keep worker cool by rapid evaporation of the moisture. The band fits any size head and may be washed and sterilized repeatedly without losing its porosity, according to the folder.

Safety Clothing 510
Plasco Safety Products Co. Illustrated in this 2-color, 16-page catalog is a complete line of protective clothing covering aprons, vests, coveralls, jackets, pants, sleeves, wrist and hand guards, shoe covers and hand pads. Materials include plastic, leather, asbestos and rubber. Specific applications are listed.

Safety Belts and Supplies 511
Acker & Man, Inc. Safety belts, hooks, anchors and straps are illustrated and diagrammed in detail in this 40-page catalog. Illustration and drawings show typical installations and uses for various types of window cleaning and other high level work. Full specifications are given.

FIRE PROTECTION

Fire Extinguishers 512
The General Detroit Corp. Dry chemical extinguishers, soda-acid, foam, carbon dioxide, water and vapor-liquid types are the subject of this 6-page, 2-color brochure. Pump tanks, wetting agents, chemical engines, hand extinguishers, safety containers, hose cabinets, recharges and knapsack type outdoof fire tanks are also covered. Types of fires applicable and specifications are also listed.

Carbon-Dioxide Extinguishers 513
Randolph Laboratories Inc. This 16-page catalog, illustrated in 2 colors, depicts the company's entire line of carbon-dioxide extinguishers and extinguishing systems. Featured are portable extinguishers from 2½ to 20 lbs. and wheeled models in 26 to 100 lb. sizes. Also outlined are automatic extinguishing systems, and soda-acid and carbon tetrachloride extinguishers.

SANITATION

Waterless Washstation 514
Sugar Beet Products Co. The waterless washstation described in this 6-page, 2-color brochure is set up near places of work so that employees do not have to go to washroom every time their hands get dirty. Cleanser is said to get out heavy soil without water or other solvent. Specifications and details are explained, as well as applications in various industries.

Toilet and Shower Stalls 515
Sanymetal Products Co., Inc. Multi-colored 20 page catalog discusses materials and finishes, types, installation, specifications and suitability of line of toilet and shower and dressing room compartments. A color chart of various finishes available is included. Full illustrations and detailed explanations cover entire line of compartments. Diagrams and hospital cubicle specifications are also covered.

Sanitation Products 516
Huntington Laboratories, Inc. This 48-page catalog gives information on the company's sanitation and maintenance products, each carefully detailed and illustrated—how it works, what it's made of and where and how to use it. Various sections cover floor maintenance products, soaps, germicides, insecticides, cleaning compounds, etc. Charts help choose the proper product for each job. Soap dispensing equipment, floor machines and vacuum cleaners are included.

Plant and Machinery Cleaner 517
Sellers Injector Corp. Hydraulic steam-jet cleaners are detailed in this 8-page, 2-color bulletin. The machine propels a solid jet of high pressure hot water and detergent for heavy duty cleaning. Ways of converting low pressure outlets to use the cleaner are discussed and varying industries, such as refineries, railroads, breweries, food industries and others are suggested as users. Differing types of cleaners and nozzles are carefully explained.

BUILDING MAINTENANCE

Adjustable Scaffolds 518
Baker-Roos, Inc. An adjustable steel scaffolding with interlocking parts which do not have to be joined with tools is the subject of this 4-page, 2-color bulletin. The advantages of the scaffolding are illustrated and discussed point by point.

Rolling Ladders 519
I. D. Cotterman. The company's line of wheeled ladders is covered with illustrations, diagrams, specifications and uses outlined in this 6-page brochure. Straight, bent and swivel side ladders, rolling stepladders, library and store ladders and ceiling or overhead ladders are listed. Brakes and casters also are described.

Rolling Scaffolds 520
Beaver Art Metal Corp. This descriptive folder explains application of the scaffolds for all types of maintenance and construction work. Detailed description of the locking braces and panels is included. No bolts, nuts or clamps are used, and the tower can be built to any height.

Side-Wall Resurfacer 521
Re-Nu-It Corp. A 12-page, 2-color brochure, illustrated and containing test results, covers the company's side-wall resurfacer. The finish is designed to resurface and protect wood, clapboard, masonry and shingle structures. It is air-blasted to the surface and is available in several colors. The process, which uses mica and asbestos, is fully described.

Vermiculite Code 522
Vermiculite Institute. This 16-page booklet presents all recommendations covering requirements for vermiculite plastering, acoustical plastic, fireproofing and concrete. Directions for using the data are included. Line drawings further simplify the usage of the booklet. Fire resistance is emphasized.

Water-Repellent 523
A. C. Horn Co., Inc. This product repels water from masonry surfaces and minimizes efflorescence as well as reducing soiling and discoloration and preserving the surface. In the 4-page, 2-color, illustrated bulletin the material, preliminary preparation, application and effect of the compound's preparation are discussed.

Acoustical System 524
Reynolds Metals Co. Panels of aluminum and a blanket of glass or rock wool are combined in this system to construct noise reducing ceilings. The 2-color, 4-page folder gives the results of sound absorbtion tests, lists uses and qualities, and explains installation by means of drawings, illustrations and diagrams.

TOOLS

Coil Reel 525
F. J. Littell Machine Co. This 2-color, 4-page bulletin illustrates and explains the use of a coil reel designed to hold a 40 thousand lb. coil of sheet metal. The advantages of this spindle type reel are explained and the specifications of the machine given. Operation of the motor, lubrication and a self-centering feature are also given emphasis.

Air Pressure Valves 526
Hannifin Corp. These valves for power press guards are designed to control air pressure up to 150 lbs. The bulletin, multi-colored and consisting of 8 pages, centers around a cut away drawing of the basic valve. The text explains the advantages of the construction and discusses the manner in which the valve works. Variations on the basic valve are also illustrated and described

(Continued on the next page)

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Free Bulletins (Cont'd)

Drill Switch 527
Tricop Distributing Co. The safety features of this drill switch are the subject of this 1-page, 2-color bulletin. Illustrations and drawings show the use of the switch and its economy features. The chuck key, used to change drills, must be inserted in the switch before the drill will start operating. This feature and time-loss savings are emphasized in the bulletin.

MISCELLANEOUS

Safety Awards 528
House of Williams. This attractively illustrated, 5-color catalog lists an entire line of trophies and awards which can be used for acknowledging safety achievements. Plaques, emblems, medals and other types of awards are listed and described in full with specifications for each kind given.

Salt Road Stabilizer 529
Morton Salt Co. Subject of this 10-page, illustrated booklet is the use of salt mixed with gravel to assure a firm, tight road. Advantages listed for roads of this type are stabilization, minimum loss of aggregate, safety from slipping on loose gravel, less dust, little frost boiling and economic construction.

Portable Loading Ramp 530
John B. Illo. A portable loading ramp unit is described and illustrated in this 4-page, 2-color folder. The unit is available with manual or electric control. Other safety and economy features are discussed and illustrated, and use and specifications are explained.

Signs 531
Eastern Metal Co. A 6-page gate-folder price list covers signs for accident prevention, electrical and mechanical hazard warnings, directional and general information, industrial housekeeping, no smoking and fire prevention and parking and traffic control. The signs are grouped in categories and fully illustrated.

Sound Analyzer 532
Hermon Hosmer Scott, Inc. The sound analyzer, discussed in this 2-page, illustrated bulletin, separates noise, sound and vibration signals into component frequency bands. The bulletin gives specifications, explains the use of the analyzer, discusses its portability and gives applications and standards.

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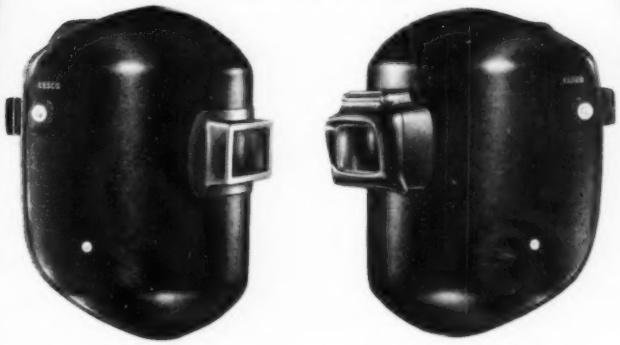

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